


IMPERIAL MILITARY GEOGRAPHY



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18th March 1918

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I am, Sir, very respectfully,
Your obedient servant,
The Secretary to the Army Council

The Army Quarterly

With which is incorporated

The United Service Magazine

Edited by

Major-General G. P. Dawnay,
C.B., C.M.G., D.S.O., M.V.O.

and

Cuthbert Headlam,
D.S.O., O.B.E.
(late Lieut.-Colonel, General Staff, B.E.F.)

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IMPERIAL MILITARY GEOGRAPHY

BY
J. FITZGERALD LEE

WITH DIAGRAM AND 2 FOLDING MAPS

THIRD EDITION

LONDON
WILLIAM CLOWES AND SONS, LIMITED
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1923

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PREFACE TO THE THIRD EDITION

STUDENTS of Imperial Organisation, Economics, and modern Historical Geography will find in this Edition much useful and authentic information, which, for obvious reasons, could not have been included in former Editions.

Special attention is directed to the details given of the skilful and elaborate solution, by the late General Von der Goltz Pasha, of a great strategic problem, more difficult than any that had ever tested the powers of his celebrated teachers, Count Von Moltke and Clausewitz.

A solution of the all-important question of the defence of British India is suggested, following the lines laid down by Lord Roberts, General Hamley, and Colonel Repington.

The Military Geography of the Pacific Ocean and its shores, and the extent to which Naval Strategy in this quarter of the globe has been modified by the construction of the Panama Canal, as well as by more recent events in the Far East, are dealt with, from a broad Anglo-American point of view.

New chapters and fresh paragraphs have been added, on Political Geography, the Far Eastern Question, the Colour Question in South Africa, the "Little Entente," the Circassian and Central Asian Republics, Antwerp, the "Indianisation" venture, the Greco-Turkish Question, the drawing and copying of Maps, and the Middle East.

I take this opportunity of expressing my gratitude to

those who have done me the honour and kindness of calling attention, in English, French, and American organs of public opinion, to the merits of the *Imperial Military Geography*. And I sincerely thank those correspondents—naval, military, and civil—who have made practical suggestions to me with regard to the contents of this book.

I regret that I do not know of any published Atlas which I could recommend to the students of Military Geography. I have found that the usefulness of the average Atlas, for the successful study of this subject, is in inverse proportion to its price.

J. FITZGERALD LEE.

PREFACE TO THE SECOND EDITION

THE first edition of this book was printed and published in 1908, and was dedicated, with permission, to His Excellency Lord Kitchener, Commander-in-Chief in India. It was recommended to military students by General Cowans, Director of Military Education in India. It has been appreciated by military students in Japan, Holland, France and the United States of America.

The forecast of some of the most important events of the Great War, which is to be found in the first edition, has proved so remarkably accurate as to cause some of those who are interested in the subject to doubt whether the book was not published during and towards the end of the Great War. The author considers it as the highest compliment to have received letters asking whether he could furnish proof that the book was written at the time stated. In every case he has referred his correspondents to the printers, who can prove that not a line, nor letter, has been changed, taken from, or added to the contents of that Edition since it was published in June 1908.

The author desires to acknowledge, with gratitude, his obligations to the following learned and distinguished writers: Colonel Niox, of the French Army; Colonel Becker and Major von Steinmetz, of the German Army; Count Zichy, of the Austrian Army; Colonels Lebedeff and Korniloff, of the Russian General Staff; and Colonel van Pieters, of the Dutch Army. These names were all mentioned in the first edition. Some of them have been heard of since then; especially Korniloff, who, in his

attempt to follow the example of Napoleon Bonaparte, fell a victim to ambition and to his want of knowledge of the human material with which he had to deal. He was the first who directed the author's attention to the very useful and interesting historical and geographical writings of another Russian General, Kouropatkin. Korniloff was no Russian. He was a *Sart* of Central Asia; he used to boast that his country was the cradle of the civilised human race, and that in ancient times his ancestors were the conquerors of the world. In his last letter to the author (1915) he foretold the awful collapse of Russian Imperialism.

The thanks of the author are also due to Colonel Mockler-Ferryman, the learned author of a most excellent work on the *Balkan Peninsula*; to General R. S. May and his *Geography in its Relation to War*; to General Macmunn, the best living authority on the Military Geography of the *North-West Frontier of India*, and to General Sir G. Aston for his well-known works on Imperial Strategy.

J. FITZGERALD LEE.

CONTENTS

PART I

CHAPTER I.—THE STUDY OF MILITARY GEOGRAPHY

Its advantages. Its importance appreciated in all highly civilised countries. The inhabitants of all countries are influenced by local geographical conditions. Ignorance of geography on the part of statesmen and high officials. What soldiers have done for geography. Battlefields marked by nature of geographical position. Why British officers should make a special study of the subject. Napoleon's instructions to his officers. Importance of study of natural features of a country. Tibet expedition, 1903. Marshes, their influence on a campaign. Crimean war. Why British soldiers had to live on dead horses, sugar-cane and turnips. Natural features artificially strengthened. Roads: motor vehicles in the Gallipoli campaign. Railways. Strategic lines, and strategic points. Military geography of Denmark. Secret Treaty of Bjorko, 1905. White man *versus* coloured man pp. 1 to 17

Solution of problems in military geography. Organisation and distribution of the military forces of the Ottoman Empire; by General Von der Goltz Pasha pp. 17 to 22

CHAPTER II.—THE BRITISH EMPIRE

General measurements of geographical areas. Dimensions of the British Isles, and depths of the surrounding waters. The coasts of England. Scotland: deer-forests of 200,000 acres, belonging to aliens. Ireland. Internal communication in the British Isles. Waterways. Mountains. Weather: isotherms and isobars. March of a battalion from the north of Scotland to Salisbury Plain: great-coats, when necessary. Records of cold, heat, and rain in England. Anti-cyclones, depressions. The earthquake tracks round the globe. Earthquakes in Great Britain pp. 23 to 35

How the British Isles are supplied with the necessities and luxuries of life. Wheat; barley; oats; potatoes; sugar; neglect of our sugar-producing islands; beef; mutton; bacon; rice; maize; imported oats; butter and cheese; coffee; cocoa; wool; cotton; hemp; teak timber, mahogany, logwood, cedar wood; rubber; iron ore; copper; tin; nickel and zinc; why the sneer of our being "a nation of shopkeepers," or business-men, is altogether unjustified; palm-oil; coir, and coconut oil (margarine); silk; gold; diamonds; pearls; ostrich feathers; mica; wines; fruits; dates; how we lost a monopoly in liquorice; oil; "torbanite"; leather, and the tanning of it; Professor Procter, of Leeds University pp. 35 to 39

British Dominions, Colonies and Possessions

INDIA.—Dimensions and distances. "Madras time." Sir George Macmunn, on the North-West Frontier. The "Durand Line." Russian railways towards India, by General Annenkoff. Products and exports of British India. Reasons for the failure of Indian trade with Central Asia. The Indian climate: the monsoons. Deadly winds and the "Karachi Tragedy." Stupidity and injustice of the officials who "inquired" into its causes. Material losses caused by ignorance of the currents in the Indian Ocean.
pp. 39 to 48

Internal communication in India: railways pp. 48 to 50

India's fighting races. Sikhs. Mahrattas. Rajputs. Jats. Dogras. Baluchis. Pathans. Punjabi-Mussulmans. Ghakkars. Gujars . . . pp. 50 to 53

"Jeshurun." Colonel Repington on "Indianisation." Defence of India: a "Military Frontier Province." British Army of the old East India Company. Kouropatkin's compliments to the Maharaja of Kashmir. Shere Singh's orders on the morning of the battle of Chilianwala. Governor-General's opinion on the moral character of Kashmir ruler. His grandson's opinion on successor. Improvement under British rule.
pp. 53 to 58

AUSTRALIA.—Dimensions and States. Lord Curzon: "Astronomical Frontiers." Harbours, and the "Great Barrier Reef." Lord Kitchener on Australian defence. The railways in Australia: disadvantages. Australian commerce and exports. Rivers. Submarine cables round the coast: the "All-Red" Cable. Kindly and generous treatment of the ex-service man by the Australian Government pp. 58 to 65

NEW ZEALAND pp. 65, 66

BRITISH NORTH AMERICA.—Dimensions, divisions, and Provinces. What is meant by "Dominion Government." Boundaries and frontiers. Canadian defence. Example of how frontiers can be altered by natural causes. Climate and soil. Exports and imports. "One of the largest oil-bearing countries in the world." Cities and towns. Railways; failure; valuable lesson in "nationalisation of railways." The Canadian Pacific Railway; economic and strategic importance. Routes to the Far East: compared, Hudson Bay and Montreal. Newfoundland: St. John's; owing to its geographical situation, one of the great aviation stations of the world.
pp. 66 to 74

Dominion of SOUTH AFRICA.—What German statesmen thought of the Cape-to-Cairo Railway. How England got South Africa. Political robbery; Gortchakoff quotes Shakespeare. Africa "the grave of reputations." Dimensions and Provinces. Natural features. Climate and trade-winds. Products: Imports and exports. Diamonds and gold. The Colour Question in South Africa. The Boer and slavery. Railway systems. Henderson on the strategic importance of South Africa pp. 74 to 81

Smaller British Possessions.

Aden.—Its backward condition, and the reasons. What Lord Roberts said about it. Why the Aden-Dhala railway was not constructed. Lord Morley. How the Simla babu caused a loss of 140,000 rupees.
pp. 81 to 84

<p><i>Basutoland. British East Africa.</i>—Shameless profiteering by Government officials. Cheating the demobilised officer and ex-soldier; exploiting them to attract the <i>banya</i> (Oriental small trader). “East Africa for the Indians.” Official difficulties placed in the way of British merchants. Goanese clerks paid at the rate of a pound a day, and trusted with important confidential documents and codes. Communication by land and water</p> <p><i>Gambia. Sierra Leone:</i> strategic importance of its chief port and capital, <i>Freetown. Gold Coast Colony:</i> advantageous position. <i>Nigeria:</i> a colony with a great future. Its railways and waterways. <i>Lagos. Nyasaland:</i> how to get there. Colonists hampered by official sluggishness. Agricultural possibilities. <i>Rhodesia. Somaliland:</i> the most useless British possession. <i>The Sudan. St. Helena. Ascension. Mauritius:</i> the most healthy tropical climate. <i>Uganda</i></p> <p>EGYPT.—The new constitution. Extent and population. The river Nile. Cotton. The Suez Canal. Violation of its neutrality, by Wolseley, in 1882. Attacked by the Turks, February, 1915. British forces checked at Gaza. Tenacity of the Turkish soldier. General Allenby takes the stage. British soldier enters the Holy City as Christian conqueror, after eight centuries of Mussulman domination. Dream of Great Mohammedan Empire vanished</p> <p><i>British North Borneo.</i>—Its importance in Naval Strategy. <i>Cyprus. The Falkland Islands:</i> their prosperity; no income tax, mutton threepence a pound, land five shillings an acre. <i>Federated Malay States. Fiji Islands:</i> distances. <i>Gibraltar. Hong Kong and Kowloon:</i> importance as naval base in the Far East. <i>Malta. Papua, or New Guinea:</i> hopeless depravity of the natives</p> <p><i>The West Indies.</i>—Importance of geographical position. Area, population, and exports. The Bahama smugglers. <i>Wrangel Island. Zanzibar. Cloves. Admiral Mahan and Sir George Aston</i> on the strategic position of Jamaica</p> <p>Lord Milner on British commerce. <i>The Imperial Conference, 1921.</i></p>	<p>pp. 84 to 87</p> <p>pp. 87 to 91</p> <p>pp. 91 to 95</p> <p>pp. 95 to 98</p> <p>pp. 98 to 101</p> <p>pp. 101 to 103</p>
---	--

CHAPTER III.—THE NEW MAP OF EUROPE AND THE INIQUITOUS TREATY OF VERSAILLES

<p>The Central European Republics. Czecho-Slovakia. Austria. Hungary. Poland. The Eastern Republics. Lithuania. Latvia. Esthonia. Finland. The Ukraine. The Balkan States. Greece and Turkey. Yugoslavia. Bulgaria. Roumania. Notes on the Treaty of Versailles.</p>	<p>pp. 104 to 111</p>
<p>The “Little Entente”</p>	<p>pp. 112 to 114</p>
<p>A few general notes to introduce the Military Geography of Europe, the question of Frontiers, and “military obstacles”</p>	<p>pp. 114 to 117</p>
<p>The Military Geography of the Rhine basin. Why it would not pay France, and how it did not pay Germany, to violate the neutrality of Belgium. Germany’s strategy in 1914, as foretold in the First Edition of this book. The Military Geography of the Rhine basin and the Upper Danube, in the</p>	

past century. The defence of Central Germany. Mainz the key to an attack from the west. The lines of the Elbe and Saale. Silesia.
pp. 117 to 126

How to draw military and historical maps. Central Europe. Mapping: copying, enlarging, or reducing maps. North Central Europe.
pp. 126 to 131

The former Austrian Empire. "Double Re-entrants"; Poland and Switzerland. Military Geography of the old frontier between Russia and Germany. Forecast (in First Edition) of the military operations which took place in this theatre of war from 1914 to 1917. The former military organisation of Germany pp. 132 to 139

CHAPTER IV.—THE HIGH LANDS OF EUROPE

Switzerland: flourishing during the earlier part of the Great War, until Italy joined the Allies. Military operations in Switzerland during the wars of the French Revolution. General Suvaroff: his Council of War. Marshal Massena; this campaign of his "should be studied by all men who make war their profession" (M. Thiers). Defences of Switzerland.
pp. 140 to 143

The Balkan Peninsula: before the Great War, and since. Harbours and landing places. The defences of Roumania. Bulgaria before the Great War. Montenegro. Albania. pp. 143 to 147

CHAPTER V.—THE FLAT LANDS OF EUROPE

RUSSIA.—The autocracy of the Czar Paul. The land and the people. Slav mentality. Opinions of Russian writers. Extremes of climate, and social conditions. Russia before the Great War. The Great Siberian Railway. Forecast (written in 1908, First Edition of this book) of the military operations in a war between Russia and the Central Powers. Solution of an interesting military problem during the Great War. Prescience of Hamley in his *Operations of the War*. The Siberian railway up to date. The decomposition of the great Russian Empire pp. 148 to 164

The "world safe for democracy" among Asiatic tribes and peoples: Turkomans, Samoyeds, Sarts, Bashkirs, and others. Orgy of republicanism. *The Republic of Georgia*: its strength and its weakness. *The Azerbaijan Republic*. *The Armenian Republic*. *The Republic of Bokhara*. *The Turkestan Republic*. Energy and ingratitude of Enver Pasha.
pp. 164 to 166

Holland.—Reference Colonel Repington's chapter on "The Low Countries," in his *Imperial Strategy*. Translation of the Report of the Dutch Minister of War on the strong and weak points in the defensive system of Holland. *Belgium*. Antwerp. Alison, on the importance of this port. Its importance proved by historical records. What Henderson says of its importance in the Napoleonic Wars. Its strategic value recognised by Pitt, and by Mr. Winston Churchill. During the Great War it was defended by some guns which had been placed in position in the year 1862! pp. 166 to 171

CHAPTER VI.—AFRICA

How to draw a map of Africa. Abyssinia. British invasion of Abyssinia; defeat and death of King Theodore, 1868. King John. The Emperor Melenik. How Italy gained a footing on the coast, and was beaten at *Adowa*. Difficulties of campaigning in this country. Climate, soil, and resources. Morocco pp. 172 to 178

CHAPTER VII.—THE MIDDLE EAST

Persia.—Russian influence. The British side of the question pp. 179 to 185

Mesopotamia, or *Irak*.—The country itself; its surroundings and physical features. Distances. The Mesopotamian campaign. Townshend and Kut. Splendid example of military organisation carried out by Maude. His successful operations. Terrible loss of life in the Mesopotamian campaign.

(Here I think it necessary to say something in reply to the criticism of a leading and influential organ of Anglo-Indian public opinion, which unfairly accuses me of employing, in the Second Edition of this book, needlessly strong language to qualify the ineptitude and criminal callousness of the Simla "brass hats," and their inhuman treatment of the British and Indian officers and men of the Mesopotamian Expeditionary Force. The words used in my Second Edition are "official ineptitude and blind folly." I have no hesitation in confessing that I borrowed this description from an excellent article in the *British Dominions' Year Book*, by Mr. E. C. Vivian, and I acknowledged my obligation to him in a note. Knowing the facts of the case, as I do, I now consider the words altogether too mild to do justice to the occasion. Those who object to them may take instead the following extract, copied, word for word, from the *Pioneer*, of Allahabad; a newspaper of whose high standing, loyalty, moderation and respectability there has never been any doubt:—

"As for the higher administration of the Army in India, there is, outside Simla, only one opinion about it in military circles: that it could not be very much worse than it is. As we pointed out, months before the Amir Amanulla launched his attack on India, Army Headquarters at Simla have learnt nothing from the disasters attendant on early mismanagement in Mesopotamia; remaining as much as ever out of touch with the needs and feelings of the Army in India. So, when trouble arose on the Frontier, we had inevitably another series of scandals which no explanation that Simla now offers can in any way excuse. And it is not the system only that has been at fault, but the men running it; and it is perhaps not unduly optimistic to entertain the hope that there will be soon a change of personnel in the important military officers in Simla."

I am accustomed to write about what I know, and not about what I don't know. What I have said, and shall say, about the Indian Military Department, is the result of some years' personal experience in it; and my statements cannot be denied by any babus, white or black, or by any journeyman whitewasher of the Associated Press.)

Expense of holding Mesopotamia, and difficulties of its defence pp. 185 to 189

Afghanistan.—Area, population, tribes. Physical features and climate. Rivers and Mountain Passes. The Ameer Abdurrahman. Treaty between Afghanistan and Persia, 1921. Distances, and how to draw map of Afghanistan, and the North-West of India pp. 189 to 195

Agreement between England and Russia (1907) with regard to the Middle East and Asia. The Baghdad Railway: its history; strategic and economic objectives	pp. 195 to 200
AIRWAYS.—Air-routes and distances between Great Britain, Europe, America, and the British Colonies. Ross-Smith's flight from London to Sydney. Air-routes and times of flight in the Middle East. Distances and routes by air, land, and sea.	pp. 200 to 203
Naval bases and dockyards	pp. 203, 204

The Pacific Ocean, and the Far Eastern Question

Mercator's chart of the world misleading and unreliable. Great circles. Shortest route between the Panama Canal and Japan. Anglo-Saxon <i>versus</i> Mongolian. Forecast of probable naval operations in case of a war between Japan and the United States of America. History of the Far Eastern Question. Why America differentiates between the Japanese and Chinese. Japan's record during the Great War, and after	pp. 204 to 209
---	----------------

PART II

A short sketch of the Political Geography of Modern Europe in its relation to Military Geography. With special reference to the Treaties, Alliances, and Ententes which preceded the Great War of 1914-1918	pp. 210 to 223
---	----------------

PART III

Examination papers, fully answered; carefully selected from papers set in the Competitive Entrance Examinations for the Royal Military Academy, the Royal Military College, the Royal Air Force, Camberley and Quetta Staff Colleges, and the Geographical Tripos in Cambridge University.	pp. 224 to 259
Twenty Test Papers on Imperial Military Geography, selected from the most recent examination papers on this subject. With hints and directions as to the Answers	pp. 260 to 272

IMPERIAL MILITARY GEOGRAPHY

PART I

CHAPTER I

THE STUDY OF MILITARY GEOGRAPHY

THE science of geography occupies a very peculiar position, as a science ; it is the earliest begun and latest understood. It is taught in kindergartens to infants of tender years ; and placed in the same category as reading, writing and other elementary subjects, in “ young ladies’ schools.” Yet it has rarely been comprehended and understood sufficiently, even by full-grown men, to be turned to much practical use.

One of the reasons of this is that until quite recently geography has never been treated as a *science* ; it has only been looked upon as a sort of useless accomplishment or hobby, like reciting, dancing, or piano-playing. Except in very few cases, it has never had that care and attention bestowed upon it which it so fully deserves, and which, I may add, it will so fully repay.

We all know how geography has been treated at our great English public schools. It is generally left in the hands of a junior master, or an assistant master in what is called the “ preparatory department ” ; and in the upper forms of the school no boy is ever taught geography, or ever learns geography, except for the purposes of examination. I speak with a long experience of English public schools and educational establishments, both as pupil and master ; and I can say that while I have known boys to study mathematics, classics, history, chemistry, and even geology, for the love of these subjects themselves, I have never once known a boy to take up of his own free will, and without the spur of examination, the study of the science

of geography. It is only recently that our Universities have given any serious attention to this important subject. Formerly, in the matriculation examinations, a few useless, childish questions, about names, and perhaps figures, used to be asked ; and no candidate was ever known to fail in the subject. An ignorance of geography was the hall-mark of the average "university man" ; there were scholarships in such subjects as Moral Philosophy, Logic, Political Economy, and Music ; but there was neither reward nor encouragement for Geography.

On the European continent, however, they did things in quite a different manner. The Germans, the French, the Russians, the Austrians, and the Italians, all take geography very seriously ; and the best and most complete geographies in print are those written by French authors, and studied by the staff officers in the French army.

German geographies are too heavy and too terribly dry ; their fault is that they aim too high ; they only leave the impression of a confused, weltering mass of figures : a nightmare of the *Encyclopædia Britannica*, *Whitaker's Almanac* and *Bradshaw's Railway Guide*.

Yet we must not forget that the Germans, and more especially the officers of the German army, knew a great deal about the geography which could not be got out of books. Many years ago I met a German officer in Coblenz, and got friendly with him. Talking to him one evening, I was surprised to find that although he knew nothing whatever about the Midland or Northern Counties of England, yet he knew every road and path and stream in Hampshire ; every hole and corner of it. When I asked him to explain this, he answered me, in the calmest and most matter-of-fact manner : " Oh, that's the part of England I was told off to work up." Not only had he surveyed Hampshire from end to end, but he had also taken a number of photographs of the defences round Portsmouth, and had lived for some time at Gosport, an honoured and trusted guest of the officers of the Rifle Brigade.

And he boasted of it. Well, we must all acknowledge that this is a very cheap and pleasant way of studying military geography ; and highly practical, though scarcely to be commended from a moral or ethical point of view ; for although "all things are fair in war," yet gentlemen recognise certain limitations in times of peace.

Our former friends and allies, with whom we split up Persia

and shook hands across Afghanistan, had but few conscientious scruples in the way they acquired their practical knowledge of the military geography of the British Empire. Once, at Rukh junction, on the way to Quetta, I discovered a railway servant reading a copy of the *Novoe Vremya*, a leading Russian newspaper in those old times. About the same time we had an officer of the Russian General Staff going about Northern India. He did me the honour of calling on me, with an introduction from a high official in Delhi. When I asked him what brought him to India, he told me he had come to study the working of the railways in India, from a purely commercial point of view, as he was greatly interested in them: as I have no doubt he was. And I have no doubt, either, that he was a practical geographer, like my German friend who had been told off to work up Hampshire.

These few facts ought to show us what an enormous amount of interest the different European Governments took in the geography of the British Empire, more than do the majority of Britishers themselves.

Now, apart from politics, there must be some sound and solid reasons for this great interest in geography, and the large sums of money spent on it, not only by European Governments, but also, more recently, by the scholars of America.

And one of the main reasons is this. The science of geography in general, and military geography in particular, has had more influence on the history of the human race than any other science that we know of. It is also a science which is not affected materially by new inventions, nor by any changes in arms and equipment. Look where we may, in history, past or present, we always find that the peculiarities of the geography of a country have been accountable for its special position in history. And it is here that geography stands above history; for men make and shape history, while geography shapes lands, men and events.

As the geography of a certain country is responsible for particular species of plants or animals, so does it exercise its peculiar influences to produce a particular race of man.

Compare, for example, the geography, in India, of the Ganges valley, and its steamy plains, with the bleak, rugged heights of the North-West Frontier: you have at once the contrast between the Bengali and the Pathan. In Europe, take sunny Italy and foggy, swampy Holland: you have the

difference between the sprightly, musical Italian and the hoarse-voiced, phlegmatic Dutchman. A date-palm or a tiger in Lapland would be as contrary to the laws of nature as a Laplander in the Punjab. A Chinaman met in Timbuctoo, or a North-American Indian in Arabia, would be stared at by the most ignorant and unthinking native of the country, and naturally so: being something in the wrong place. And why is this? Because what we commonly call his "surroundings" (which, after all, only means the *geography* of the country in which he happens to be) do not fit in with him. He is no brother to the people by whom he is surrounded; because there is no such thing as a brotherhood of all mankind. There never was, and there never will be.

It may be thought, perhaps, that the British Empire has not been influenced by its own peculiarities in geography. But geography has had more influence on the British Empire than on any other country in the world. If the surface of the globe be divided into two hemispheres, one containing the greatest mass of land and the other the greatest quantity of water, it will be found that the centre of the land hemisphere is London, the capital of the British Empire.

With regard to geography itself, the most convenient division of it, following the example of the best European authorities on the subject, is under four heads: political geography; commercial geography; physical geography; and military geography.

With one of these the merchant has to deal: with two of them the civil student of geography has to deal. With three of them the statesman who directs the affairs of his country ought to be familiar; but the military officer and leader of armies ought to be master of the whole four. For we cannot forget that the soldier must be something more than a mere theorist; he has to work, like no other man, with living materials of flesh and blood.

I need say nothing here about the merchant or the civil student; so we come to the statesman; and, after him, to the soldier.

With regard to our statesmen and their knowledge of the science of geography, we have a very good example in a former Prime Minister of England, under King George the Second—the Duke of Newcastle. He had been Secretary of State for thirty

years and Prime Minister for ten years. Towards the end of that time a prominent military officer, who had spent many years fighting in Canada, came to England to tell this statesman how things were going on the American continent. We have it on the best authority that the Prime Minister spoke these words :—

“ O yes—indeed—my dear sir ! O yes ! Annapolis must be defended. Certainly—troops must be sent to Annapolis. But will you very kindly tell me, where is Annapolis, and what is it ? And—oh—you tell me Cape Breton is an island ! Dear me ! You know, I thought it was a cape ! Please show it to me on the map. Wonderful ! so it is, sure enough, an island ! My dear sir, you always bring good news ; I must go at once and tell the King that Cape Breton is an island ! ”

Now just try to imagine for a moment the state of affairs when the Prime Minister of England was a man of such colossal ignorance that he looked upon as most important news, worthy of being specially communicated to the King, a geographical fact which the average schoolboy of his time would have been deservedly punished for not knowing. Is it any wonder that with such statesmen at the head of affairs England lost the richest and greatest colony in the world ? Yet it would be wrong for us to boast that we are much better or wiser than our forefathers in this respect. One example will be sufficient. When the Great War broke out, a patriotic nurse came all the way to England, from Suva, the capital of the Fiji Islands, to do her share for the empire. When the war was over, our military authorities kindly offered her a first-class return passage to New Zealand, with “ *a railway warrant on to Fiji, and the right to a sleeper on the train, should she have to spend a night travelling.* ” There is a wide stretch of 1,300 miles of sea between New Zealand and Suva.

Here we leave the statesman, and come to the soldier. And the first fact that strikes us, a fact which is deeply imprinted on the iron pages of history, is that in all ages soldiers have done more for geography, and have been better geographers than any other class of men. Sailors have done their share, too ; but nothing to the extent which soldiers have done. It may be thought that missionaries ought to be good geographers ; but, as a rule, they are not. The greatest missionary of ancient times, St. Paul, travelled a good deal over the Roman world ; but he has not left us one scrap of useful

geographical information. A grand exception to the rule was David Livingstone.

The man who did most for geography in ancient times was that celebrated soldier and conqueror, Alexander the Great. He marched his victorious army from the Dardanelles to the Sutlej, across Armenia, Persia and Afghanistan; and took only ten days in marching down from the Oxus to Attock. He gave the Western world an account of the geography of the countries he had passed through; the only practical geography of the Middle East that Europe saw for sixteen centuries. So even from these earliest times, we find that soldiers were geographers and promoted the study of geography.

Alexander marched his army over the country between the Indus and Sutlej; and he fought his greatest battle in India, where, twenty-one centuries after his time, Lord Gough fought the army of the Khalsa, the celebrated field of Chilianwala. For it should be remembered that *there are certain positions marked out, as it were, by the nature of their geography, for battle-fields*. Those who are acquainted with Indian history will remember that there were three great battles fought at Panipat. In Europe, four battles were fought in and about Leipzig at different times; and in the war of 1866 the Prussian Chief Staff were afraid that Austria would push up through Saxony and make a fifth battle at the same place. The whole of the soil of Belgium, including the battle-fields of Steinkirk, Landen, Oudenarde, Ramilies, Ligny, Quatre Bras and Waterloo, is soaked with the blood of European armies of the past as well as of times quite recent.

About a century after Alexander, came the greatest general of ancient times, Hannibal, who was made Commander-in-Chief of the armies of his country when he was only twenty-five years old. We know that he was a keen and industrious student of geography; and it has been stated on good authority that his success was mainly due to his thorough knowledge of the countries in which he carried out his military operations.

That first and best of all war correspondents, Julius Cæsar, was also a diligent student of geography, and we know that he turned his knowledge to very good account.

When we come down to modern times we find that nearly all the great and successful leaders in war were men who made geography a particular study. Marlborough, Napoleon, Wellington and Von Moltke, in Europe; and, more recently, outside

Europe, the commanders and directors of the Japanese armies in Manchuria, and of the Allied armies in the Middle East.

Let us take the greatest of these names, Napoleon, and find out for ourselves what geography he studied ; and, above all things, how he studied it. He knew the geography of a restricted area in Europe ; and of Lower Egypt. His knowledge of men and human nature, of military and political science, was almost supernatural ; but he knew nothing of the geography of Great Britain, Scandinavia, Russia, or Turkey ; so that his knowledge of geography was limited to a tract of country about half the size of India. And the geographical conditions of the countries which he studied and knew were not at all so different from each other as are those parts of the world where British soldiers have fought before and may have to fight again ; for example, New Zealand, South America, Egypt, South Africa, Afghanistan, China, Canada, Tibet, and the various lands included in an empire which covers one-sixth of the habitable earth. If, then, it was incumbent on Napoleon and his officers to study the geography of the comparatively small and restricted area included in his campaigns, how much more is it the duty of our British officers to make a study of the possible scenes of their future military operations.

Young military officers may think, and say to themselves, "As we are not all going to be generals and leaders of armies, what is the use of our studying military geography ?" I think I can give a very satisfactory answer to that question, and it is this. Success in war depends not only on obedience, but on INTELLIGENT obedience and co-operation. No matter how well your general is informed, no matter how obedient you may be, still unless you know the country in which the campaign is being carried out, you cannot supply that INTELLIGENT obedience which is one of the most important factors in the success of military operations.

Napoleon advised some of his most trusted commanders to read, over and over again, the history of the ancient heroes and operations of war. By this he did not mean that men should study those ancient histories for the purpose of comparing the bow-and-arrow with the magazine rifle, or Pharaoh's chariots with batteries of horse artillery. No ; as he said himself, "Every commander should first of all know his ground" ; that is, learn and study the geography of the theatre of war. Napoleon's most successful campaigns were carried out in

countries the geography of which he knew well and had thoroughly studied.* That masterpiece of strategy, his campaign of 1796, in North Italy ; Marengo, in the same country ; Austerlitz, Jena and Friedland ; in all these cases he knew, better than the inhabitants themselves did, the country in which he was fighting. And his first great defeat, his *débâcle* after Moscow, took place in a country of which he did not know the geography.

"Every commander," he said, "should know his ground." From his instructions to his marshals, and from his correspondence, we shall have no difficulty in finding out what he meant by this.

And here is where the student of military geography should carefully follow his instructions, of which I am about to give a *précis*.

First of all, it is necessary that the commander should make a thorough study of the *natural features* of the theatre of war. The plains and valleys, the mountains and the mountain passes. On which side the mountains are steep, and on which side they slope away gently. Whether their sides are bare or covered with forests. Where the snow-line is, if they are high enough to have a snow-line ; when the snow begins to fall, and when it begins to melt. Also it is most important to know the heights of the passes above the level of the sea. Perhaps this point may not be thought of much importance ; so I shall give an example. We are all aware that the temperature at which water boils, at the level of the sea, is 212° F. Now this boiling-point falls 1 degree for every 500 feet rise above the level of the sea ; so that at some of the heights at which our troops were operating in Tibet (1903) the boiling-point sank as low as 180° F., and water boiling at this temperature is not able to cook meat or hard grain ; so that troops depending on these foods only would have to starve just at the time they were most in want of nourishment. From this one example alone it can be seen how important it is to take into account the elevation of the theatre of operations.

After the mountains we come to the rivers. Not only must the length and direction of the rivers in the theatre of war be studied, but also their breadth, depth, speed of current at

* This is also true of Stonewall Jackson in his Shenandoah Valley campaign, and of Kitchener in the Nile campaign.

different times and places, and the exact position of the fords. In rivers which run down from great heights the fords are subject to sudden changes, which may be very dangerous to troops crossing by them. Of this we had a proof when a squadron of a British cavalry regiment was swept away in trying to cross the Kabul River. Again, in the year 1848, want of knowledge of the fords across the Chenab, near Wazirabad, was very nearly causing a great disaster to the British army in the Punjab.

In dealing with the natural features of a country, we next come to marshes, swamps and deserts.

The Pinsk marshes around the river Pripet, in East Poland, had a striking effect on Napoleon's lines of operation, and his strategy, in 1812. The swamps all along the south coast of Turkey in Europe prevent the landing of an army anywhere along that coast except at Saloniki and Dédé Agatch. The deserts of Central Asia and Eastern Persia have swallowed up armies time after time.

Before leaving the natural features of a country, it should be remembered that the climate of any country is influenced, to a considerable extent, by these, taken together with the natural features of the surrounding countries. The climate of South Russia is exposed to the bitter blasts from Siberia on the north-east, and in winter is colder than parts of Norway, 15 degrees more to the north. In the Crimean campaign (1854-1856), more than 50,000 lives were lost, because our statesmen had forgotten the fact that winter comes after autumn, and insufficient provision was made for protecting the fighting men against the severity of the climate. In the whole campaign there were only 4,000 British soldiers killed and wounded; but 20,000 perished owing to ignorance and neglect on the part of the authorities. And, later on, the Russians themselves, though accustomed to extremes of cold, lost thousands of men during the severe winter of 1877. Gourkho lost 2,000 men; and the 24th Division lost 6,000; all frozen to death, in a few cold nights.

The next step we come to is the practical use which the general can make of his knowledge of geography.

First of all, the geography of a country guides the general as to the composition of his army; it directs him as to the nature of his armament; at least, it tells him what he must *not* do, which is the next best thing to telling him what he should do.

Then, when about to carry out military operations in a country, the commander of an army ought to get together all the correct information he can about the natural resources of that country. Let us take a case, in the history of the British army, where this was neglected. In the winter of 1848, the British commander-in-chief, Lord Gough, was informed that the country between the Ravi and the Jhelum was overflowing with sheep and cattle, wheat and fruit. He evidently believed this, and acted on it; and for more than a whole week after the battle of Ramnuggur (1848) the British troops had to live on dead horses, sugar-cane and turnips.

After the student has mastered the natural features of the theatre of war, the next thing to do is study the artificial features.

And in doing this, what he has to find out first about the artificial features is: whether they increase the military value of the natural features: if so, in what way, and in how far. Or, in what way, and in how far, the artificial features modify the natural features.

In order that this may be clearly understood, I shall give examples. The fortified city of Coblenz, in Germany, is situated at the junction of three river valleys, those of the Rhine, the Moselle, and the Lahn. Opposite the town, on the eastern bank of the Rhine, there rises up a high, steep, broad-topped rock, called Ehrenbreitstein; and there is a strong fortress built on the top of this rock. Here, now, we have the natural features of the three river valleys meeting near a steep, high rock. The military value of these natural features is greatly increased by the artificial features of the fortified city of Coblenz and the fortress on Ehrenbreitstein.

Again, we have the very strong French fortress of Belfort, increasing the military value of the gap between the Vosges and the Jura mountains. We have the artificial fortress of Shumla modifying the military and strategical value of the Eastern Balkan passes for any army invading Bulgaria from the south; and in the north-west of British India we have the naturally strong position of Quetta, made still stronger by artificial means, so as to threaten the flank of any advance from west to east through Afghanistan, or from north to south along the eastern frontiers of Persia.

In addition to the artificial features of fortified towns,

fortresses and entrenched camps, there are roads, railways and canals. Of the value and importance of good roads in a theatre of military operations the Great War has furnished sufficient proof. Of course, roads soon get cut up when heavy traffic is constantly passing over them. But the motor vehicle is now so much improved that it is almost independent of roads. One of the best proofs of this is something which happened during the Dardanelles campaign. Two wretched tracks, unworthy of the name of roads, led from Sedd-ul-Bahr and Cape Helles to Krithia, ankle-deep in dust and pitted with shell-holes. Four armoured cars spun along each of these tracks, at the rate of 14 miles an hour, to support the attack on the Turkish position. They came right up to the enemy's trenches, halted, and soon put the Turks to flight. At the end of the engagement all the cars came back without any serious damage except that one had lost its turret; and of the occupants there were only a few men wounded. When such an exploit as this is possible where the roads are as bad as they can be, it is easy to understand how formidable the motor vehicle can be in a theatre where the roads are good. It was for some time considered that the railways had made roads almost obsolete for war purposes; but the motor vehicle has helped the roads to come into their own again.

Of the use and tremendous advantages of railways in war it is unnecessary to say anything, as the subject is so well known and appreciated. But perhaps it may not be unnecessary to call attention to the fact that the Power which holds the railways in any country holds that country; and if the Power which holds the country does not also hold the railways, well, so much the worse for that Power. From the moment that China gave Russia permission to build a railway through Manchuria, she had lost Manchuria for ever.* When Austria (1908) had annexed Bosnia and Herzegovina, she began to survey for a railway down to the Vardar Valley and Salonika. Bulgaria at once objected; and, for some time, held up the direct traffic between Vienna and Constantinople, until Austria agreed to suspend the survey. Again, on account of this, the question of the ownership of the Baghdad Railway will be now a very difficult one to settle peaceably. A process of internationalisation is vaguely advocated; but the practical working of an internationalised railway

* By the terms of the Washington Conference (1922) China got back this Railway, to become her sole property in the year 1938.

has yet to be solved. No Power effectively administering a given territory can be conceived as admitting other Powers to equal shares in the control of a railway passing through that territory.

It remains now to be shown how Military Geography deals with the natural and artificial features of a country ; how they should be studied and put to the best practical use. The first thing to become acquainted with is what are called the "Strategic Lines." These may be conveniently divided into three classes : the Lines of Invasion, the Lines of Defence, and the Lines of Retreat. And these form the very essence of the Military Geography of any country. In proceeding to study them a good map is necessary ; but the ordinary text-books of school geography will be of no help whatever. Your map has a scale : this is the first thing to make use of. With an ordinary pair of dividers, practise judging the distances between the principal places on the map before you. Then set yourself the problem to be solved by the commander of a force of, say, 100,000 for the invasion of the country from a particular direction, or for the defence of a certain part of its frontier. By what lines you should move to carry out the invasion successfully, and what would be the best position for your immediate base ; on what lines you should fall back in case of retreat, and the most favourable positions for checking the pursuit. Then turn to the problem of defence, and work it out in a similar manner. This is not so difficult nor uninteresting as it may seem at first sight ; and it is far more profitable to a soldier than the solution of problems on chess or bridge. In your solutions there are two things which must not be forgotten : first, that it is generally best to act as Nature does : move along the lines of least resistance. Secondly, it is of very little use to know how a thing should be done, unless you do it in the best possible way.

Having fully mastered the three classes of strategic lines, you should make a study of what are called "strategic points," that is, points which command important lines, or occupy important positions. And finally, you should study whatever features, natural or artificial, would be likely to interfere with or hinder the movements of troops. And in doing this, do not let it slip out of your mind that what might hinder cavalry or artillery need not hinder infantry. These are called "strategic obstacles" ; and no commander of an army can hope to be successful unless he takes them fully into account.

It has been necessary to speak of lines and points and obstacles separately ; but the military student must not take them separately. He must compare their relative positions on his map ; he must see in how far is each influenced by the other ; and how they all influence his general plan of operations. And he must remember that *although local considerations may be sometimes sacrificed to general considerations, yet general considerations must never give way to local ones.*

Having carefully studied each country in the way I have suggested, it would be well to compare these countries with regard to their strategic importance, not so much in themselves as in their strategic relations to the countries around them. For instance, the province of the Punjab is, from a strategical point of view, the most important part of India, as are also the Isthmus of Suez and the West Persian isthmus, in what is called the Middle East. As to which country in Europe is of the greatest strategic importance, there are various opinions. Some years ago, in a most excellent practical lecture delivered at the Royal Artillery Institution,* on "Geography in Relation to War," the learned lecturer gave his vote for Switzerland. And, in certain circumstances, there is no doubt that Switzerland would fill this position.

But there is another European country which, though small and apparently insignificant, is just as important as Switzerland from a strategic point of view. That country is Denmark.

The political situation (which, of course, influences the strategic importance) of Denmark is particularly difficult ; because Denmark does not enjoy the benefit of a recognised neutrality, like Switzerland and Belgium. While, in addition to this, it is incumbent on Denmark to carry out the difficult task of guarding the entrances and exits of the Baltic Sea ; and her geographical situation is such that she could not expect any effective or practical assistance, in time, from any Power whose interest it would be to assist her, by force of arms, in keeping the Baltic Straits open. Switzerland can always be assisted by railways, while Denmark could only be assisted by sea. In the case of a naval war in the Baltic Sea, the first objective of one or other of the belligerents would be Copenhagen, a position almost exactly half-way between London and St. Petersburg, by sea.

During the Crimean War (1854), Denmark had a very difficult

* By Colonel (now General) May.

part to play in trying to avoid a breach of neutrality, with regard to the Allied Fleets of England and France which were operating against Russia in the Baltic.

Again, in 1885, at the time of what was called the "Pendjeh Affair," when we expected every moment to be at war with Russia, a secret British Commission decided unanimously that in order to carry out naval operations successfully against Russia, in Europe, the first thing to be done was to seize Copenhagen.

And on two former occasions in history the British Fleet passed through the Danish straits immediately before the declaration of war.

As for Germany, in her former relations with Denmark, both politically and strategically—we know now what we did not know while it was going on—after Germany had failed to induce Denmark to join the North German Confederation, she built the Kiel Ship Canal in order to have a safe naval base of operations against a possible attack by the combined French and Russian Fleets. And in 1905, the secret Treaty of Bjorko, between the Kaiser and the Czar, was made with the express object of isolating England in European politics. By one of its articles, Denmark was to be seized and occupied by Germany.

These are only a few of the many reasons which could be put forward to show the great strategic importance of Denmark; and when history reveals the secrets of the Great War, it will be found that the question of Denmark was of no small consequence in the Military Councils of the Allies.

With the development of the resources of science, as well as of railways and navies, the centre of gravity of political power keeps constantly shifting. It has been in the past, at various times, the Mediterranean, South-Eastern Europe, the North Atlantic, the North Sea and the Baltic. With the opening of the Panama Canal, it has now, for the first time, moved to the Pacific Ocean. To follow and study these changes is as much the duty of our soldiers and sailors as it is for our statesmen. But there are other things also which claim the serious attention and careful study of British soldiers and sailors. One of these is the great Trade Routes, since the British Empire stands at the head of the world's trade; and anything which affects the trade affects the empire. After the Trade Routes come the coaling-stations, cables, oil-fields and air-routes; all of which

are of the greatest importance in the case of combined operations between our Army and Navy.

To say anything here about what is called "Command of the Sea" would be only to repeat what has been already so well said by Admiral Mahan and Sir George Aston. But in the future it is more than probable that this question will be bound up and identical with a still greater and more vital question: "The Supremacy of the White Races." Coloured races have conquered and ruled worlds before, and it is not impossible that they may do so again. There is no man who has had greater opportunities than the White Man; and very bad use he has made of them. His vaunted civilisation has culminated in the untimely death of 20,000,000 human beings, while the Coloured Man, in his teeming millions, looked on with delight. The White Man may now make his alliances with Yellow Men or Black Men; which will, no doubt, help for a time to stave off the day of reckoning. But the Coloured Man has a retentive memory; and he, too, is looking forward to "The Day."

From east to west the White Man has been educating him; and education is the secret of power. The Yellow Man in Asia and the Black Man in Africa and the United States have already grasped this fact; and when they feel themselves strong enough, they are certain to use their power and their tremendous numerical superiority to rise up and crush the White Man. It may be some years before the stage is fully prepared for the tragedy; but even now a little corner of the screen gets accidentally lifted up, affording us a glance from which we can judge the probable trend of the piece. Shortly after the end of the Manchurian campaign, an article appeared, in a widely-circulating and influential Japanese periodical, which wound up with these words: "So now, honourable gentlemen of Europe, when you come to Japan you must conduct yourselves properly, and get rid of those insolently superior airs you assume when you think you are dealing with inferiors. Far from being your inferiors, we have proved, by the extreme test, that we are superior to the greatest among you; and you had better bear this in mind, in your dealings with us from now and onward." This from a nation which only sixty years ago fought with the bow-and-arrow, looked upon the horse as a wild and dangerous animal, and prostrated themselves in worship at the sight of a steamboat as a living monster of the deep. Recent events have proved that such a quality as national gratitude is non-existent

even among European peoples ; and if we expect to meet it in the coloured races, we are doomed to bitter disappointment.

There is a period approaching in the world's history when the White Man's hand will be against every man and every man's hand against him. Then the White Man will have to fight as he has never fought before, for his very existence. The probability is that in the long run he will find himself driven out from all the large tracts of land, to his most ancient inheritance, the "Isles of the Gentiles." The problem of his existence will depend upon his heritage, the "Command of the Sea"; but only so long as he can hold it. Then it will be found, perhaps, that those of us who are now holding such political opinions as that of a "White Australia" have been neither so wrong nor so short-sighted as is generally supposed. In the old Arab legend, the kind-hearted Sheikh regretted, when it was too late, his permission to the camel to put its head into his tent. For although having the reputation of a domesticated animal, it still remained a camel.

It is not without some reason, beyond our ken, that the greatest empire in the world, the greatest of the White Race, happens to hold these lands on the other side of the globe, as well as the temperate regions in North America and South Africa. The wonderful growth of the British Empire, from pole to pole, has been attributed to various sources : by our friends, to British enterprise and statesmanship ; by our enemies, to our alleged qualities of greed and cunning ; although recent world-events have proved that these latter characteristics are the monopoly of no one people under the sun. And they cannot be reasonably held to account for such geographical phenomena as the Gulf Stream bearing warm breezes to the British Islands, or the monsoons coming at the right time to water the parching plains of British India. The same inscrutable causes which placed England's geographical position in the centre of the land hemisphere arranged that the great mass of the habitable lands on the earth should be in the temperate zone, where men can best live ; into these things it is not the business of the geographer to inquire, but only to deal with them as he finds them.

The best educational authorities are now agreed that history should go hand in hand with geography ; and this system, if properly carried out, will not fail to make both subjects more

interesting and edifying than they would be if they were treated separately. Political History has the same relation to Military History that Political Geography has to Military Geography. And since Strategy to a great extent depends upon and is influenced by Politics, it is often very difficult to draw the exact line between Military and Political Geography. This, of course, does not refer to the problems we have to deal with in the former; but to certain reasons and motives from which such problems have arisen; and it is here again that History comes in. History supplies the human element; and to leave the human element out of any science is to leave it lifeless. When we hear of any event, we have an instinctive desire to know something about the place where it happened; and conversely, when we come to any place, we feel an extra interest in it when we know that something of historical importance has happened there.

Altogether, apart from its mere market value as a subject of examination for the soldier, Military Geography, especially a knowledge of the Military Geography of the British Empire, has the additional advantage of being a profitable, instructive, and interesting study for the statesman, the merchant, the traveller, and the man in the street.

Solution of Problems in Military Geography

In the foregoing pages general directions are given which will assist the student not only in devising, for himself, strategical problems with reference to any particular country, but also in solving them. Still it is likely that the keen military student will want something more practical and concrete than the dry bones of mere theory and formulæ. Therefore I think it well to give here the solution of the most important and difficult strategical problem of modern military history: a solution evolved, after twelve years' study, by the great German strategist, General Von der Goltz Pasha.

Towards the end of the year 1911—following on the "Agadir Affair," and preceding the Balkan War of 1912—those in Berlin and Vienna who were interested in a strong Ottoman Empire plainly saw that the administration and strategic distribution of the Turkish forces left much to be desired. Military strength

there was, right enough; but it was so badly and clumsily arranged that, in the words of General Shefket Pasha, "the hands were not able to help either the feet or the head."

General Von der Goltz had been doing his utmost to create an efficient administration and organisation for the Turkish Army, from 1880 to 1892. It must have been a most heart-breaking job for the author of *Das Volk im Waffen*. He told a staff officer of his (Major Von Kiesling) that it was like the captain of a man-of-war being put in charge of a cattle-ranch in Mexico. In December, 1914, he was again sent to Turkey, and in November, 1915, to Baghdad.

His plan had not been completely carried out by the Turkish Government before the early part of the year 1914, having been interrupted owing to the Bulgarian victories in 1912.

When this able and experienced strategist was entrusted with the defence of a great Military Empire, let us note, first of all, what he did *not* do. He did not subsidise a group of newspapers to scream and bellow that the Empire was in danger, nor did he start pelting with mud the Turkish statesmen and commanders who were responsible for the *débâcle* of 1912. He did not begin by building fortifications, or strengthening those which already existed. Being a man of intelligence and common sense, as well as a practical strategist who had not forgotten the episodes of Sevastopol, Metz, Plevna, and Port Arthur, it never entered his head to spend the money of an impoverished State in building "impregnable fortresses," laying out entrenched camps, or even raising Martello towers "for coast defence." No, he concentrated all his thoughts and energies on the Army and what belonged to it: its mobility, communications, and supplies, and the best way in which it could be employed for defence and offence.

To a correct appreciation of not only the situation but also of the magnitude of the problem, a knowledge of the following facts is necessary:—

The total area of the Turkish Empire at that time was 650,000 square miles; that is, more than five times as large as the whole of the British Isles, or three times the size of the German Empire. There was only one main centre line of railway, incomplete towards the eastern frontier; with a branch (Hejaz) through Damascus on to the Red Sea coast, and two smaller branches, at Adana and Afium Kara Hissar, connecting with seaports. The north-eastern, and the greater part of the

eastern frontiers are marked by lofty and rugged ridges separating Turkey from Russian and Persian territory. Four-fifths of Southern Turkey consisted of the wildest deserts in the world, bounded by barren and inhospitable shores. On the north, six hundred miles of a steep and rocky coast, with only three small and practically useless harbours, stretch from the Bosphorus to Batoum.

Communications are wretched and neglected. No serious attempt had ever been made by the Turkish Government to utilise the waterways of the Tigris, Euphrates, Kizil Irmak, and Sakaria.

The greater part of Asia Minor is a plateau with an elevation of over 3000 feet, skirted by mountains on the south and south-east, in which the most important gap is the Cilician Gates. This has in history played the same part towards Syria as the Khyber Pass has been to the Punjab.

Although the valleys enjoy a delightful climate, still on the plateau itself the winters are bitterly cold, and the summers oppressively hot. Heavy rainfall occurs only rarely in the north-east.

Horses and mules are scarce ; the camel is the principal beast of burden, and the buffalo is employed in agricultural operations. Sheep and goats are numerous. The soil produces large quantities of wheat, barley, vines, olives, figs, and raisins ; the people also grow cotton and manufacture silk.

There is no soldier in any army in the world so easily fed, or so contented with what he gets to eat, as the Turk. He will march or fight all day on a bowl of coarse grain softened with puddle water, or a handful of black bread and a couple of onions or a cucumber. Osman's soldiers, who beat the Russian Imperial Guard outside Plevna (1877), had only rags to their backs, no shoes on their feet, and no food in their bellies.

The Peace Effective of the Turkish Army was 400,000 of all ranks ; the War Effective, 1,600,000. Military service was obligatory, beginning at the age of twenty, and lasting for twenty years. In the first line (*Nizām*) the soldier served nine years ; after that, nine years again in the second line (*Redif*), and two years in the Reserve (*Mustahfiz*).

With a carefully selected staff, of twenty German and sixteen Turkish officers, General Von der Goltz arrived at the following solution of the Military Problem of the Ottoman Empire :—

Thirteen Army Corps, and 5 Independent Divisions. There were 43 Nizam, 35 First Redif, and 19 Second Redif Divisions ; with 14 Brigades of Cavalry, one for each Army Corps, and one to be split up among the Independent Divisions. (*The distribution and stations of the Army Corps and Divisions should be carefully noted and followed, with a good map.*)

I. Army Corps : Headquarters, Constantinople. First Division, Constantinople ; 2nd, Hademkoi ; 3rd, Scutari.

II. Army Corps : Adrianople. Fourth and Fifth Divisions, at Adrianople and its detached fort, Mustafa Pasha ; 6th, Kirkikillese.

III. Army Corps : Rodosto and Bulair. Seventh Division at Rodosto ; 8th, Balikessar ; 9th, the forts in the Gallipoli Peninsula, northern shores of the Dardanelles.

IV. Army Corps : Smyrna. Tenth Division at Smyrna ; 11th, Denizli ; 12th, Burdur.

V. Army Corps : Angora. Thirteenth Division at Angora ; 14th, Kastamuni ; 15th, Yusgat.

These five Corps formed what was called the First Military District, placed under the command of one Inspector-General. It was calculated that they could be mobilised, and concentrated at any specified point between Angora and Adrianople, in four days.

VI. Army Corps : Aleppo. Sixteenth Division at Adana ; 17th, Baiburt ; 18th, Aleppo. Shortly before Turkey declared war against the Allies, the 17th and 18th Divisions were concentrated at Aleppo.

VII. Army Corps : stationed in different parts of Western Arabia. The 19th Division at the port of Hodeida, on the south-eastern shores of the Red Sea ; the 20th at Saana ; the 21st at Assyr ; and the 22nd along the Hedjaz Railway, between Maan and Medina.

VIII. Army Corps : Damascus. The 23rd, 24th, and 25th Divisions were stationed in and quite close about Damascus itself ; the 26th was employed as a link between Damascus and the Aleppo Corps to the north ; while the 27th held the seaport and district of Haifa.

These three Corps formed the Second Military District. The eight Divisions of the Aleppo and Damascus Corps were mobilised in the middle of October, 1914 ; and four days after war was declared they were concentrated within 170 miles of the Suez Canal and 20 miles from the Anglo-Egyptian frontier.

Their Commander and Inspector-General was Djemal Pasha, who formed his advanced base at Beersheba; with Gaza, strongly held, on his right, to command the most direct route from Egypt to Syria.

IX. Army Corps : Erzeroum. The 28th and 29th Divisions in the fortress itself and the perimeter defences of the place.

X. Army Corps : Erzinjan. The 30th and 31st Divisions in Erzinjan itself, and the 32nd at Sivas.

Here, referring to the map, note that Angora, Yusgat, Sivas, Erzinjan, and Erzeroum are all on an almost direct west-and-east line, with an average distance of about 120 miles, or six days' march, between each station. So that the Fifth, Ninth, and Tenth Corps were in a position to render each other mutual assistance. The roads and communications were improved by the forced labour of thousands of Armenians.

XI. Army Corps : Van. The 33rd Division was stationed at Van, and the 34th at Mush.

The Ninth, Tenth, and Eleventh Corps formed the Third Military District.

XII. Army Corps : consisting of the 35th Division at Mosul, and the 36th at Kerkuk.

XIII. Army Corps : Baghdad. The 37th Division at Baghdad, the 38th at Basra.

The Twelfth and Thirteenth Corps formed the Fourth Military District.

In addition to these regular troops the Hamidieh irregulars, all cavalry, were raised among the Kurds. They were organised in tribal regiments, of which 24 were formed. It was found absolutely impossible to keep them in anything approaching to discipline. "Their rapacity and savage cruelty caused the Armenian villagers to regard the Turkish regulars, in comparison, as angels of light." *

Now taking a general view of the solution, we find that the whole of Turkey's military forces was divided into four groups, each completely self-contained, under its own Inspector-General and staff. But if we look upon the two Eastern Districts as one group, which, practically, they formed, we have three groups : (i) the European, (ii) the Arabian, and (iii) the Russo-Persian.

The Arabian group, centred on Damascus, was the strongest.

* *Djavid Bey.*

Because, although the European group consisted of fifteen Divisions, yet the Angora Corps of three Divisions, which officially belonged to it, was intended more as an auxiliary to the Third Military District and to the defence of Erzeroum. The *Militär Wochenblatt* and the *Revue Militaire Suisse* considered that it was a great mistake not to have withdrawn the four Divisions of the VII. Army Corps from their posts in Western Arabia directly war was declared. The general idea in the plan of Von der Goltz was that while the Arabian group was striking hard at Egypt the other two groups should stand on the defensive; and it would probably have been successful were it not for the British expeditions to Mesopotamia and the Dardanelles. The invasion of Mesopotamia by a British force from India had not been taken into account. Still, this invasion cannot be said to have upset Von der Goltz's plan to any great extent, in that the Mosul and Baghdad Corps proved for some time quite equal to their task. The Turkish force that captured Kut after beating back three desperate attempts to relieve Townshend, was only 14,000 strong*; and had it not been that the Van and Mosul Corps were criminally wasted by useless operations in Armenia and Western Persia, the capture of Baghdad, even by the valiant and energetic Maude, would have proved a most expensive and difficult task for the British Force. Ten Divisions of the European group successfully held the Gallipoli Peninsula and the Lines of Bulair; and in Syria, before Allenby came on the scene, it would not be correct to say that the Arabian group had been quite unsuccessful.

The student of Military Geography will find the solution of this weighty and difficult problem both interesting and instructive. In the early part of the year 1914 the leading military journals in Europe and America were unanimous in its praise and admiration, as a masterpiece of deep thinking, laborious detail, clear foresight, and brilliant execution. If General Von der Goltz had never done anything else, had never written a book, in his life, still this one achievement of his, the solution of the Turkish Military Problem, deserves the sincerest admiration of all practical soldiers, leaders of men, strategists, and military geographers, of no matter what nationality.

* General Von Gleich, Chief of Staff to General Von der Goltz; *Vom Balkan nach Baghdad*, 1922.

CHAPTER II

THE BRITISH EMPIRE

The British Islands

THE British Islands lie between 50° and 60° N. Latitude, and between 2° E. and 10° W. Longitude. To calculate the area of any part of the British Islands, from a map on which the parallels of latitude and the longitude are marked, count 70 miles for each degree along the meridians, and 40 miles for each degree along the parallels of latitude. Multiply the results together, and this will give you the number of square miles in the area you have measured. If you wish to find the number of acres, multiply the number of square miles by 640.*

The Area of England and Wales is, in round numbers, 58,000 square miles; of Scotland, 30,000; and of Ireland, 32,500. Total, 121,000 square miles.

I shall use one or other of these as units in speaking of the size of other countries; thus, Bulgaria is a little larger than Ireland; Switzerland is half the size of Ireland; Persia is five times as large as Great Britain and Ireland together; Afghanistan is seven times as large as Scotland; Sweden, three times the size of England and Wales; and so on.

The greatest length of England, from the Lizard to Berwick, is 430 miles. Its breadth, from Land's End to Lowestoft, is 370 miles; but from London to Bristol, that is, from sea to sea, is only 100 miles; from Hull across to Liverpool, 110 miles; and from the Solway Firth to the mouth of the Tyne only 60 miles. There is no place in England more than 70 miles

* In measuring *any* area on the earth's surface, always take a degree along the meridian as 70 miles. But as the degrees of longitude narrow down, from 70 miles at the equator to 0 at the poles, the length of the degree of longitude is different at different latitudes. The following lengths in miles may be taken as approximately correct: at 20° , 65 m.; at 30° , 60 m.; at 40° , 55 m.; at 50° , 45 m.; and at 60° , 35 m.; the differences in the first three being 5, and in the last three, 10 miles.

from the sea ; and the coast-line of England is 2,200 miles long. The whole sea-coast of the British Islands is 9,000 miles.

The greatest length of Scotland, measured from Dunnet Head to the Mull of Galloway, is 288 miles ; and its breadth varies from 180 miles, between Buchan Ness and Ardnamurchan Point, to 33 miles between the Firths of Clyde and Forth.

The greatest length of Ireland, from Fair Head to Mizen Head, is 300 miles ; and its breadth, from Howth to Slyne Head (in Galway), is 174 miles ; but a line drawn across from Dundalk to Ballyshannon would be only 85 miles long. The elevation of the land across the middle of Ireland is so low that if it were decreased by 200 feet the north of Ireland would be separated from the south by a strait from Dublin to Galway.

From Dover, in England, to the nearest point of the Continent, Calais, in France, the distance is only 21 miles. From the Lizard to Brest is 100 miles, the breadth of the entrance to the English Channel ; and, in the middle, from Southampton to Havre, is 112 miles.

The depth of the sea round the English coast varies considerably. The average depth of the Straits of Dover is only 100 feet. Between Brest and Falmouth the depth of the Channel is 300 feet. Between Holyhead and Dublin (65 miles) the depth of the Irish Sea is 500 feet ; and the channel which separates Scotland from Ireland is 800 feet deep.

With the exception of a depression near the south-west coast of Norway, the North Sea is shallow. If its bed were to rise 60 feet, we should have a large island about 100 miles from the Yorkshire coast, over what is now called the Dogger Bank. If it were to rise 100 feet Lincolnshire would be joined to Holland ; and if it were to rise 200 feet, the whole of the east of England would be one with Denmark, North Germany and the Netherlands.

The North Sea is about three times the size of England and Wales, and is the best fishing ground in the world. It is so shallow that in any part of it a building as high as St. Paul's Cathedral would show its dome above the surface. It is mapped out as carefully as any English land. All the shallows are marked and named. It is exactly suitable for "trawlers," which work most successfully in 50 fathoms, or 300 feet, of water. The best-known of the shallows is called the Dogger Bank, where the sea is nowhere more than 90 feet deep. The shores of Great Britain are increasing in size. During the past forty years, 50,000 acres have been reclaimed from the sea, as against about

7,000 acres lost by coast erosion, making a nett increase of about 8 square miles.

The East Coast of England is not so indented as the west coast. The principal openings are the mouth of the Tees, the Humber, the Wash, and the Thames.

From Newcastle, near the mouth of the Tyne, across to Hamburg, is 420 (nautical) miles; * from Hull to Hamburg, 380; from Hull to Amsterdam, 215; from Harwich to Rotterdam, 106; from London to Antwerp, 200.

A body of troops collected on the shores of Holland could be landed on the Essex coast in 10 hours; German troops collected at Emden, or on Borkhum Island, could land in England in 14 hours; and British troops could get from London to Antwerp in 15 hours at the most. Great ports on the east coast have corresponding and convenient ports on the west coast. Bristol, for the Atlantic, is only 100 miles west of London; Hull is only 80 miles from Manchester, and Grangemouth only 25 from Glasgow.

The Yorkshire coast is rocky and dangerous; but an invading force could easily land at the estuary of the Humber, 180 miles from London. The coasts of Lincoln, Norfolk, Suffolk, and Essex sink lower and lower as we go south, until we get to the marshy and muddy estuary of the Thames. The principal port on this stretch of coast is Harwich, 106 miles from Rotterdam and 90 from Flushing.

Coming along the south coast, from east to west, we find nothing that can be called a harbour between Dover and Portsmouth. But then we have a number of natural harbours: Portsmouth, Southampton, Poole, Weymouth, Dartmouth, Plymouth, Devonport and Falmouth. From London to Portsmouth, by rail, is 74 miles; † to Southampton 80; and to Plymouth (G.W. line) 250. Portsmouth and Southampton are protected by the Isle of Wight; Weymouth and Plymouth by breakwaters. From the Isle of Wight across to the very strongly fortified French port of Cherbourg is only 80 miles. One of the greatest trade routes in the world passes through the

* To bring nautical miles to statute miles, multiply by 13 and divide by 11.

† The Duke of Wellington strongly objected to the building of this railway, as "it would make an attack on London much easier for the French." Of a similar nature were Lord Wolseley's objections to the Channel Tunnel.

English Channel, and we see that some of England's greatest natural ports flank this route; while the ports of France, on the south side of the Channel, are few and unimportant in comparison with the English ports.

By far the most important harbour on the west coast is Milford Haven, with the naval dockyard of Pembroke. This is the finest natural harbour in Great Britain; 17 miles long and about 2 miles broad; 280 miles, by rail, from London.

In former times Bristol was the greatest port in the west of England, but now it stands a long way below Liverpool, Cardiff and Swansea. It has a considerable coasting trade, a large trade with Ireland, and sends a line of steamers direct to New York.

Cardiff is the fourth port in the United Kingdom, and has the largest single dock (Barry Dock) in the world.

On the outbreak of the Great War the headquarters of the First and Third Divisions of the Main British Fleet were at Sheerness and Dover respectively; the Second Division was based on Cromarty, and the Fourth on the Channel Ports. Harwich and Hull were the bases of operations for the torpedo flotillas, while depots for submarines were to be constructed at Dundee and Shields.*

Liverpool, with Birkenhead, 200 miles from London, is the second port in the British Empire. The greatest and best-known trade route across the Atlantic is from Liverpool to New York, 3,100 miles; the voyage taking about seven days. But another important trade route from Liverpool is that to Quebec, round the north coast of Ireland, 2,630 miles. A new trade route, from Liverpool to Port Nelson, in Hudson's Bay, is sure to follow the development of Canada. There are also trade routes from Liverpool to (a) Boston, (b) Philadelphia, (c) Baltimore, (d) New Orleans, and (e) West Africa. The West Indian trade is almost entirely with Southampton; and from Southampton to Jamaica is 4,000 miles.

With regard to the traffic between Liverpool and Australasia, the distance from Liverpool to Sydney (12,260 miles), by the Panama Canal, is almost exactly the same as it is by the Suez Canal. But the voyage from Liverpool to Wellington, in New

* On the whole of the Eastern Coast there was no Government dry-dock large enough for a modern battleship; and now the only dock which can take a *Hood* is at Rosyth.

Zealand, by the Cape Horn route, is 1,000 miles longer than that *via* the Panama Canal. The three leading seaports on the western coast of the American continent, Valparaiso, Callao, and San Francisco, have been brought much nearer to Liverpool by the Panama Canal. The length of the old route from Liverpool to Callao was 10,200 miles; by the Panama Canal it is reduced to 5,900; and while the former route from Liverpool to San Francisco was 13,800 miles, the present one by the Panama Canal is only 7,700. But to get to the Far East from Liverpool, the Suez Canal route is by far shorter than that *via* the Panama Canal. From Liverpool to Cape Town is about exactly the same distance as to Buenos Ayres, 6,200 miles; and from Liverpool to Constantinople, or Alexandria, by sea, is 3,000 miles. From the port of London to Amsterdam is 300 miles; to Bremen, 400; and to Hamburg, 450.

The Solway Firth has many sandbanks and low shores, which render it useless for naval or commercial purposes.

The east, west, and north coasts of Scotland are bold and rocky; the south, flat and sandy. The average elevation of the surface of Scotland is more than 500 feet, while that of England and Ireland is less than 400 feet. But this has its advantages, in that the rivers of England and Ireland, being slower, are more useful than the Scotch rivers. There are many fine estuaries on the east coast; the most important being the Firths of Forth, Tay, Moray, Cromarty and Dornoch. The most important estuary on the west is the Firth of Clyde. Glasgow, on the Clyde, is the commercial capital of Scotland, and has a very large foreign trade with America and India. The next port in Scotland is Leith, on the Firth of Forth, which does a large trade with the North Sea and the Baltic. From Leith to Hamburg is 500, to Christiania 600, to Copenhagen 700 miles. Glasgow and Leith are each the same distance from London, 400 miles; just twice as far away as Liverpool. The other important Scotch ports are Aberdeen and Dundee.

From being a country which has produced, in proportion to its population, conditions of life, and opportunities, a greater number of the best soldiers, statesmen, merchant princes, travellers, artists and authors, than any other country under the sun, Scotland now seems to have become a land of the loafer, the idler, the plutocrat and the sham "sportsman." Its acres are no longer used to raise men, or food for men; but as

preserves for wild animals. In the "Report of the Game and Heather-Burning (Scotland) Committee" we read that one-fifth of the whole of Scotland, 4,000,000 acres, is to-day devoted to deer-forests. There are forests, under single ownership, of 40,000 to 80,000 acres; and, quite recently, 200,000 acres, stretching across Scotland from sea to sea, were formed into a single deer-forest by an alien purchaser. These preserves are steadily encroaching on arable land and pasture; and enormous depredations are made by the deer on neighbouring land still under cultivation. Now when a man who has risked his life for the empire asks for a few square yards of ground, on which to build a hut to shelter him, he is told to go to—the Colonies, or elsewhere, for it. Yet it has been calculated that the annual money-earning capacity of the population lost to the British Islands, by emigration, during the last 30 years, is £500,000,000.

On the east coast of Ireland there is only one good bay, and that is Strangford Lough. On the north coast we have Lough Foyle and Lough Swilly; but on the west coast, eaten out by the Atlantic, there are many fine bays: Donegal Bay, Sligo Bay, Blacksod Bay, Galway Bay, Mouth of the Shannon, Dingle Bay and Bantry Bay. On the south coast, there are Kinsale Harbour, Cork Harbour, Youghal Harbour, and Waterford Harbour. The two principal ports in Ireland are Cork in the south and Moville in the north. The shortest distance between the coasts of Ireland and Great Britain is from Donaghadee to Port Patrick, 22 miles. The majority of the cables connecting Europe with America run from Valentia Island, south of the entrance to Dingle Bay, to Trinity Bay, in Newfoundland. The *naval bases* round the Irish coast are: Cork Harbour, Berehaven, Blacksod Bay and Lough Foyle.

The following are, in round numbers, the distances in miles of the different European capitals from London: Brussels, 200; Paris, 230; Amsterdam, 250; Berne, 450; Berlin and Copenhagen, each 600; Christiania, 750; Vienna and Madrid, each 800; Rome and Stockholm, each 900; Lisbon, 1,000; Belgrade, 1,050; Sofia, 1,050; Bukharest, 1,300; Petrograd, 1,350; and Constantinople, 1,550.

Internal Communication.—The most important railways in England are:—

Great Western.
London and North-Western
North-Eastern.
Midland.
Great Eastern.
Great Northern.
London and South-Western.
Lancashire and Yorkshire.

Of these, the only two which have no terminus in the great centre, London, are the NORTH-EASTERN and the LANCASHIRE and YORKSHIRE. I have placed the railways in their order of mileage.

The principal towns on the Great Western are: Windsor, Reading, Swindon, Bath, Bristol, Bridgewater, Taunton, Exeter, Plymouth, Penzance. On its northern branch: Oxford, Leamington, Warwick, Birmingham, Wolverhampton, Shrewsbury, Chester. And, by the Severn Tunnel, Bristol, Newport, Cardiff, Swansea, Milford.

On the London and North-Western: Willesden Junction, Rugby, Lichfield, Stafford, Crewe, Wigan, Preston, Lancaster, Penrith, Carlisle. It is continued to Glasgow by the "West Coast Route." A branch from Crewe goes by Chester, Conway and Bangor, to Holyhead, for Ireland.

On the North-Eastern: York, Thirsk, Darlington, Durham, Newcastle, Berwick, and (by the North British) to Edinburgh. Branches to Scarborough, Sunderland and Shields.

On the Midland: St. Albans, Luton, Bedford, Kettering, Leicester, Derby, Manchester, Liverpool. Branch from Leicester to Leeds. Also from Leicester to Birmingham, Worcester, Cheltenham, Gloucester.

On the Great Eastern: Cambridge, Ely, Norwich, Yarmouth, Lowestoft, Harwich, Ipswich.

On the Great Northern: Barnet, Hitchin, Peterborough, Grantham, Newark, Doncaster, York.

On the London and South-Western: Weybridge, Basingstoke, Salisbury, Exeter, Plymouth. Also Southampton, Bournemouth, Weymouth.

On the Lancashire and Yorkshire: Liverpool, Manchester, Rochdale, Halifax and Wakefield. Branches to all the principal towns in Yorkshire and Lancashire.

In SCOTLAND, the principal railways are: North British,

from Berwick, through Edinburgh and Glasgow ; also Carlisle, Hawick, Melrose, Edinburgh ; and Edinburgh, Falkirk, Dundee.

Caledonian : Carlisle, Gretna, Lamington, Carstairs, Glasgow.

Highland Railway : Perth, Dunkeld, Killiecrankie, Forres, Inverness, and on to Wick.

In IRELAND, the principal railways are : Midland Great Western, from Dublin to Galway ; Great Southern and Western, Dublin to Cork ; Great Northern, Dublin to Belfast.

Canals.—The principal canals in England are :—

- (1) The Manchester Ship Canal : makes Manchester a port ; 35 miles long, from Eastham to Manchester ; breadth 120 feet, depth 30 feet. Can take ships of the largest tonnage.
- (2) The Leeds and Liverpool Canal : connects the Mersey with the Yorkshire Ouse.
- (3) The Grand Trunk Canal : connects the Mersey, Trent and Thames.
- (4) Kennet and Avon Canal : connecting Bristol with the Thames.
- (5) The Oxford Canal : connects Birmingham with the Thames at Oxford.

In Scotland the principal canals are :—

- (1) Caledonian, from Inverness to Fort William, 60 miles long : connects the Atlantic Ocean with the North Sea.
- (2) Forth and Clyde Canal : Glasgow to Grangemouth.
- (3) Crinan Canal : across the Cantyre Peninsula.

In Ireland there are two canals of importance : the Grand Canal, 160 miles long, connecting Dublin with the Shannon ; and the Royal Canal, from Dublin, crossing the Shannon near Athlone.

The principal rivers in England are : The Thames, 210 miles long. Rises in the Cotswold Hills ; is navigable for barges up as far as Lechlade, 160 miles from the sea.

The Severn, 220 miles long. Rises in Plynlimmon ; is navigable for barges as far as Welshpool, 120 miles from its mouth. By means of the Berkeley Ship Canal, sea-going vessels drawing 10 feet of water can get up to Gloucester.

The Trent, 180 miles long. Rises in North Staffordshire

and flows into the Humber. Is navigable as far as Burton, 105 miles from its mouth.

The Yorkshire Ouse, 150 miles long; navigable up to the city of York.

The principal rivers in Scotland are: The Tay, 110 miles long; the Spey, 108; the Clyde, 98; the Tweed, 96; the Dee, 90; and the Forth, 60 miles.

The principal rivers in Ireland are: The Shannon, 224 miles long, navigable to the head of Lough Allen, 210 miles. The Bann, 100 miles long; and the Barrow, 114 miles, navigable to 10 miles north of New Ross.

Mountains.—The mountains of England may be conveniently divided into three groups: the Cumbrian and Pennine Range; the Cambrian, or Welsh system; and the Devonian system.

The Pennine Range, which in some places is about 40 miles broad, extends from the Cheviot Hills to the Peak, in Derbyshire; the highest point being Cross Fell, in Cumberland. The range is, at its northern end, separated from the Cheviot Hills by a gap, less than 450 feet above the sea level, through which a railway runs connecting Newcastle with Carlisle.

The Cumbrian group includes all the mountains in the Lake District of Cumberland and Westmoreland, the highest of which is Scawfell.

The Cambrian system covers nearly the whole of Wales; the highest peak is Snowdon, 3,571 feet.

The Devonian system rises nowhere to more than about 2,000 feet.

The principal mountains in Scotland are the Grampians, stretching about 100 miles in length, from the North Sea to the Atlantic Ocean. The highest peak is Ben Nevis, 4,400 feet. The Lowther Hills form the watershed between the basins of the Clyde and Tweed. Then there are the Pentland Hills and the Lammermoor Hills, none of which attain a height of 2,000 feet.

In Ireland the principal mountains are in the counties of Galway and Kerry. The highest peak is Carran Tual, in Kerry, 3,400 feet.

Conditions of Life in the British Islands.

(a) *Weather.*—The climate of England is warmer in winter and cooler in summer than that of the other countries of Western

Europe. In some years there may be a very cold winter, or a very warm summer; but that such weather is abnormal is evident from the way in which it is commonly expressed: an "exceptionally cold winter," or warm summer. Any good atlas contains maps from which the student can see for himself the *isotherms* and *isobars* * of the British Islands, and of those countries in the same latitude. In a Military Geography there is no need to go into them in detail, but it is worth while to trace out one of these lines in particular; namely, that which joins all the places where the lowest temperature in the year is 14° F. or 18° below freezing-point. This runs out from New York to the north-east, almost marking the northern edge of the Gulf Stream, going well south of Nova Scotia and Newfoundland. It then runs to the east of Iceland, and on to the north of Norway, where it suddenly sweeps round in a great bend by west to south, and then south-west till it comes opposite Bergen, where it goes direct south. It passes to the west of Hamburg, and then turns to the south-west again, including the north-east of France and the whole of Switzerland. Here it turns to the east, sweeps down to the Balkans, and passes on eastwards through the middle of the Black Sea. The British Islands lie on the broad entrance to the loop formed by this line; having the Gulf Stream on their west, but only the North Sea on the east. From this it will be easily understood why the temperature of the Hebrides and the north-west of Scotland is as high as that of the Isle of Wight, in January; while the temperature of Lincoln and Norfolk, which push out eastwards into the North Sea, is four or five degrees lower. Edinburgh is in the same latitude as Moscow; but while the January temperature in Edinburgh is 7° above freezing-point, they have 20° of frost in Moscow. In July the temperature of the eastern counties is 8° higher than that of the Hebrides, mainly owing to the hot, eastern winds which come over the North Sea.

If a battalion had to carry out a long route march, in the month of January, from the north-west of Sutherland to Hull, they would not need their great-coats at the start, nor until they came within 30 miles of Inverness. They would wear them till they got as far as Stirling; and from here they would not need them again until they got to Roxburgh or Berwick.

* An *isotherm* is an imaginary line passing through places having a corresponding temperature throughout any particular period of time. An *isobar* is a line connecting places at which the mean height of the barometer at sea level is the same.

Through Northumberland, Durham and the north of Yorkshire, great-coats would be only an encumbrance; but within 40 miles of Hull they would be welcome and necessary. If from Hull the battalion had to march to Salisbury Plain, they could not do without their great-coats until they got within the boundaries of Warwickshire; but from here to the end of the march they would have no need for them. But if the same battalion, starting from Sutherland, had to march, *via* Glasgow and Carlisle, down to Salisbury Plain, in the month of May, they would very probably find their great-coats useful, against rain, from the beginning of the march, and as far south as Manchester or Stafford.

The most severe frost ever known in the British Islands was on December 4, 1879, at a place called Black Adder, in Berwickshire, when the thermometer registered 8° F., or 24° below freezing-point. The hottest place is London: the highest temperature ever registered in the United Kingdom is 97° F., in London, on August 9, 1911. On this same day, at Greenwich, 160 feet above the sea level, the official thermometer very nearly reached 100° F., the temperature being, in both cases, taken in the shade. The wettest place is Seathwaite, in the Lake District, where 8 inches of rain have fallen in 24 hours. But for the heaviest rainfall in a given time, London holds the record; namely, 3½ inches in little more than 1 hour, in Camden Square, on June 28, 1878. When our Anglo-Indian, in his customary way, sneers at some of our English newspapers for saying that the "London heat was almost tropical," his mental attitude in this respect is not due to his overflowing knowledge of the ordinary facts of physical geography.

According to the best authorities on meteorology—the science which deals with weather and climate—the state of the weather in the British Islands, especially in summer time, is the result of what are called *anti-cyclones*, and *depressions*, or cyclones. The word "anti-cyclone" is the name given to a region of high barometric pressure. The temperature in such a region in the summer months is high, and the temperature of the atmosphere over such a region is above normal. This generally means settled weather, absence of cloud, regular winds, and high thermometer readings. "Depression" is the name given to a region of low barometric pressure. It is usually accompanied in summer by low temperature; and as the

temperature of the upper air is also low, this causes unsettled weather, clouds and rain.

Fortunately, the British Islands are comparatively free from earthquakes. The lines marking the region of earthquakes round the globe run very nearly with those which mark the volcanoes. There seems to be a knot, or junction, of these lines at the Azores. From here one line runs up to the west of the British Islands; passes through Iceland and Jan Mayen Island, and is supposed to cross the North Pole regions on to Kamchatka. Another line starting from the Azores goes direct east, through Portugal, South Spain, Italy, Asia Minor, and on to the Pamir Plateau in the Himālaya. From about here it splits into two branches: one going north-east till it joins the Kamchatka line, the other going south-east, into Assam, Burmah and the East Indies. The Kamchatka line runs through the Kurile Isles, Japan, Formosa, and the Philippines, joining the Pamir-Burmah line at Celebes. From this junction a line sweeps through the New Hebrides and New Zealand, nowhere nearer than a thousand miles from the Australian coast. It then goes south, through Mount Erebus; and, having crossed the Antarctic Ocean, comes out at Cape Horn, runs up by the Andes and Rocky Mountains, passes the shores of Alaska and through the Aleutian Isles into Kamchatka. Where this line gets to the north of South America, a branch is thrown off to the north-east, through the West Indies and across back to the Azores. There is also a line from the Azores through the Canaries and Cape Verde Islands, and along the Guinea coast to the Kamerouns and Central Africa. The places where all the great earthquakes recorded in history have taken place—Lisbon, Italy, Aleppo, Japan, Celebes, Caraccas, and others—are found on some one of these lines.

One of the most remarkable facts connected with earthquakes is that they are so frequently associated with abnormally hot weather. This was first remarked by English scientists in the year 1750. The latter part of January and the beginning of February were so warm that birds built their nests, and farmers began to cultivate their fields. On February 8, the people of London were awakened out of their sleep by a loud, roaring sound and a sharp shock of earthquake, causing the wreck of houses and some loss of life. In March, some severe shocks were felt in Liverpool and in Central Scotland. Coming to more recent times, the effects of the Hereford earthquake of 1896, and of that in Carnarvon, 1903, were felt not only

all over Wales but in the adjacent parts of England. Judging from its formation and geographical position, Devonshire should be more subject to earthquakes than any other part of Great Britain, though the effects are never likely to be very serious.

(b) *How Great Britain is supplied with the necessities and luxuries of life.*—The British Isles grow only 2 per cent. of the world's wheat, and 5 per cent. of the world's barley. Most of this is grown in Eastern England, where the rainfall is less than 30 inches in the year, and the monthly temperature between March and November never falls below 41° F. The other important crops are oats and potatoes, which are chiefly grown in the east of Scotland, and in the north-east and south of Ireland. The people at present in Great Britain would be starving within a week if they had to depend for food on the produce of their soil.* Of each pound of wheat they eat, 4 ounces come from the United States, 4 ounces from other parts of the British Empire, and 3 ounces from Argentina, 6,000 miles away from our shores.

Before the Great War, we were getting 60 per cent. of our sugar from Germany, 8 per cent. from Holland, 6 per cent. from France, and 2 per cent. from our own sugar-producing islands in the West Indies! We imported annually 1,500,000 tons of sugar from Germany.† Now it is calculated that an acre of cane-field yields a ton of sugar; and we possess in the sugar-growing island of Jamaica alone 2,700,000 acres. So that, in this respect, our colonies have a grievance as real and legitimate as Newfoundland had when, in the time of our Stuart Kings, this colony was placed under the jurisdiction of the Mayor of Southampton!

Our meats are beef, mutton, and bacon. About 60 per cent. of the beef we get from home production; about 15 per cent. from the United States, and the same quantity from Argentina. We are well off for home-reared mutton; still we find it necessary to import 12 per cent. of our requirements, in this line, in frozen mutton from New Zealand and Argentina. Of the bacon we import, 50 per cent. comes from the United States and Canada, and 30 per cent. from Denmark.

We get nearly all our rice from Burmah and India; the

* The only counties of England which could live for six months on the produce of their own soil are Devonshire and Cheshire. If life could be sustained on potatoes only, Lincolnshire might be added.

† It is a curious fact, not generally known, that Germany made large quantities of sugar by treating old linen rags with sulphuric acid, and washing the result with lime water, until it crystallised in the form of glucose.

rice-port of the British Empire is Rangoon. We also get small quantities from the Dutch East Indies and Siam.

Most of our **maize** we get from the United States and Argentina (about 75 per cent.); and nearly all the rest from South Africa. Before the war much of our imported **oats** came from Russia; now we get it from Canada, the United States and Argentina; and small quantities from South Africa.

The greater part of our imported **butter** and **cheese** comes from two provinces of Canada: Ontario and Quebec; but we have always had a large trade with Denmark in butter, bacon and eggs.

There is a large trade in **live cattle** between the United States and the British ports of Liverpool and London.

We get our **tea** from India and Ceylon. London is the greatest tea market in the world. Our **coffee** comes from Brazil to London; and our **cocoa** from the West Indies and the Guinea Coast, to London, Liverpool, and Southampton.

All our imported **wool** we get from Australia and New Zealand. About 50 per cent. of it comes to the port of London; and from here very large quantities of wool were re-exported to France and Germany before the Great War.

The raw **cotton** which we import comes from the United States and Egypt, and goes direct to Liverpool and Manchester. The imports of cotton from India (Bombay and the United Provinces) have been lately decreasing, owing to reasons into which it is unnecessary to enter here.

We get our **hemp** from the Philippine Islands, and our **jute** from India. The jute-port of Great Britain is Dundee.

Our **timber*** comes from Sweden and Norway, to the ports of Hull, London, and Liverpool; **teak timber** from India; **mahogany** and **logwood** from Central America and West Africa; and **cedar wood** from the countries bordering on the Mediterranean Sea.

Rubber is imported from Brazil and West Africa to Liverpool; and before the war a very large trade was carried on between Liverpool and Germany in this article of merchandise.

It is not many years ago since the Malay Peninsula was the greatest producer of rubber. But wild speculation and over-production during the past few years have played havoc with

* Great Britain imports 10,000,000 tons of timber annually; and, in 1915, the imported timber cost £190,000,000. Yet we have 2,000,000 acres of waste land, and 12,000,000 acres of mountain and heath land.

this industry in Malaya ; and now that it costs fourteen pence to produce a pound of dry rubber which is only worth eightpence in the market, the speculators and aspiring profiteers can only sit and hope for better days.

We get **iron ore** from Spain, through the port of Bilbao, to Cardiff, Llanelly, and Newport, in South Wales ; and a large quantity of **iron** comes every year from Sweden to Grimsby and Hull. The greater part of our **copper** comes from Chile and Australia ; and our **tin** from the Straits Settlements.

The story of our **nickel** and **zinc** supplies is peculiar. One of the best nickel supplies in the world is in our Dominion of Canada. So it might be thought that, as far as nickel was concerned, the British Empire was in good case on the outbreak of the war. At least we should have had plenty of nickel for ourselves, as well as being able to keep it from the enemy. But the fact of the matter is that the nickel ore had been exported from Canada to the United States, because the Dominion herself had no nickel refineries. Having got to the United States, the nickel was dealt with by a corporation, the majority of whom were Germans ! Again, before the war, Germany had a good deal of native zinc, but this did not content her. So she began to hunt about in the British Empire, and found a splendid supply of zinc in Australia. A German company was formed ; and they entered into a contract with the " Broken Hill " Mines for all the zinc concentrates until the year 1921 ! The result was that when the war broke out we found one of our Colonies under contract to supply an important war material to the enemy, because our own industrial captains and capitalists had not had the enterprise to deal with the stuff themselves. No wonder we repudiated Napoleon's sneer that we were a nation of shopkeepers or business men.

We get **palm-oil** from Nigeria ; **coir** and **coconut oil** (margarine) from Ceylon.

Our **silk goods** are from Japan and China ; **gold** from the Transvaal, Australia, British Columbia and Yukon ; **diamonds** from South Africa, and some from Brazil ; **pearls** from Ceylon and Australia ; and **ostrich feathers** from South Africa.

India (Central Provinces and Madras) sends us **manganese** ; and nearly all our **mica** comes from Bengal.

The **wines** that we drink are generally supposed to have been grown in France or Spain ; but wines are also manufactured in our colonies of Australia and South Africa.

Fruits, such as oranges, figs, bananas and olives, come to us from the Mediterranean countries, also from the West and East Indies; and we get **dates** from Mesopotamia. In this part of the world we missed an opportunity of securing almost a monopoly of **liquorice**. On the banks of the very tortuous Tigris a number of small shrubs grow which look like half-withered heather. Some years after we had established "Residents," agents and consuls in these parts, an American globe-trotter happened to be sailing up the Tigris. He amused himself by landing frequently and "cutting off the corners" in the windings of the river. At one of these, while waiting for his boat, he pulled up the little shrub at his feet, and tasted its root. He then filled his pockets with more of these roots; and, when he reached Baghdad, got into communication with his consul. The Turkish Government was only too glad to know of anybody who was willing to pay a few hundred pounds a year for the privilege of farming a stretch of wild shrubs in Irak; and in a very few years the profits of the American Liquorice Company ran into six figures sterling.

To the east of Lower Mesopotamia, and within the Persian border, there are very important oil-fields. **Oil** is also got in large quantities from Burmah; but the oil-fields of Canada promise to be the most productive in the British Empire. The quantity of oil found in the British Islands up to the present is of no consequence.

The question of oil production *in* the British Empire, as well as from British controlled fields *outside* the empire, has now become an Imperial problem of great importance. At present the oil-fields in the empire produce only 2 per cent. of the world's output. Of this Burmah produces 1·6 per cent., out of 1·9 per cent. from the whole of India. But quite recently a new oil-field has been discovered near Attock, by the Indus, between Rawal Pindi and Peshawar. The island of Trinidad, in the West Indies, just off the northern coast of South America, promises well in oil production. Its record has risen from 4,000,000 gallons in 1910 to 35,000,000 gallons in 1917. The discovery of oil in Egypt is a most important event; especially since the sources of the oil are so convenient to the Suez Canal. At Gemsah and Jebel Zeit, 170 and 160 miles respectively from Suez, oil has been found in fairly large quantities. (The Arab name of the latter place means *the oil mountain*.) Up to the present, the annual output for these parts is about 30,000,000

gallons. Coming to the Far East, Dutch prospectors have found very productive oil-fields in Borneo; oil has been found in Sarawak (British) and in islands off the coast. Twelve years ago the British Government purchased a controlling interest in the Anglo-Persian Oil Company for £2,200,000; a stroke which has been compared, in success, with the purchase of the Suez Canal shares. Some oil-producing minerals are found in Australia; the best known being what is called **torbanite**, something similar in appearance to cannel coal. Again, oil-shale has been worked in Scotland and Newfoundland, producing an average of 20 gallons a ton. But neither the torbanite nor the oil-shale can ever hope to be able to compete with the oil itself that comes shooting up out of the earth, by the ton. In Athabasca (N.W. Territory, Canada) there has been found a true oil-yielding mineral, to which the name of "tar-sand" has been given, and which is so plentiful that it is considered inexhaustible.

An account of how the necessities of life have been procured would not be complete without saying something about that very useful and necessary commodity, **leather**. When England was suddenly called upon to provide at least 8,000,000 pairs of boots for her fighting men, the problem was a very difficult one. The raw hide could not be simply wrapped round the men's feet, as was the fashion with the old Highland chiefs, and is still among some Turkoman tribes. It took three months to tan the raw hide into good solid leather; and, during the war, time was more valuable than anything else. The problem was solved by a professor at one of our youngest universities: Procter, of the University of Leeds, was the man who shod the British Army. By a process which he discovered, the time required for tanning the raw hide into leather was reduced *from 80 days to 16 hours*. Yet we look in vain among the long lists of names the King has delighted to honour to find the name of Professor Procter of Leeds University.

The British Dominions and Colonies

India forms the middle part of the south of Asia, lying half-way between England and Australia, and also half-way between Aden and Singapore. Let it be granted that Colombo, in Ceylon, is a British-Indian seaport; we may consider it as the vertex of an isosceles triangle, of which each side is 3,000 miles long, and

the base 4,000 miles. At the western end of the base is Durban ; at the eastern end, Albany. Therefore the large Dominions of Australia and South Africa are equally distant from India. Now the distance from New York to Southampton is 3,000 miles, and the voyage takes 7 days. But the conditions of travelling in the Indian Ocean are altogether different from those in the North Atlantic ; so that it will be safer and more correct to reckon 12, or even 14, days for the voyage between Colombo and either Durban or Albany.

The great seaport on the west coast of India is **Bombay** ; 900 miles from Colombo and 1,600 from Aden. Now if we take Bombay as centre, and a line 1,000 miles long as radius, the circumference of our circle will pass through Calcutta (E. 15° N. from Bombay), and Peshawar (almost exactly north). The base of the triangle formed by joining these three places will be 1,200 miles, which gives us the distance from Calcutta to Peshawar. Going from south-east to north-west along this base line, we pass quite close to Allahabad, Ambala and Amritsar. Allahabad and Madras are nearly in the same longitude, and the "Madras time" is used throughout India. Madras is located by drawing a line 600 miles long from Bombay to the south-east. And now if we take Madras as centre, and a line 800 miles long as radius, our circle will pass through the Andaman Islands (E.), Calcutta (E. 50° N.), Allahabad and Baroda (200 miles north of Bombay). If from Peshawar we draw a line 25° to the east of south, and make it 700 miles long, this gives us Karachi, the port of Sind, Punjab and N.W. Frontier Province, 500 miles, by sea, from Bombay. And 400 miles direct north of Karachi locates Quetta. A line 600 miles long, drawn from Peshawar, in a direction W. 10° N., will have at its western end Zulficar, which marks the junction of the boundaries of Turkestan, Persia and Afghanistan. At about one-third of the distance from Peshawar, measured along this line, we get Kabul ; and 100 miles before we get to the western end of it we cross the Russian railway which runs down from Merv to Khushk, on the road to Herat (100 miles south-east of Zulficar). Herat is 400 miles almost direct west from Kabul. Draw a line joining these two places ; and on the north and south of this line construct an isosceles triangle having the equal sides each 300 miles long. The vertex of the triangle above the line gives us Kwaja Saleh, the most important strategic position on the Amu Darya (Oxus) ; and the vertex of the lower triangle

locates Kandahar. If on the line connecting Peshawar with Kabul we describe an equilateral triangle, its vertex will mark the Dorah Pass, one of the most important crossings over the Hindu Kush Range. If we measure to a point 100 miles north of Zulficar, we have the north-eastern corner of Persia, and the Turco-Persian town of Sarakhs; and the continuation, to the south, of the Sarakhs-Zulficar line, for 700 miles, will give us Gwadur, the Baluchi port on the Arabian Sea. The officers and men of some of our gunboats know this little place well; because for many years it was a regular nest of "gun-runners" who got their contraband wares mostly from Muscat, 250 miles to the south-west, across the Gulf of Oman.

If on the 800-mile north-and-south line connecting Gwadur and Sarakhs we construct an equilateral triangle, with its vertex to the west, this vertex gives us Fao, the small port and cable-station on the south of the estuary of the Shat-ul-Arab (the river formed by the union of the Tigris and Euphrates). The line from Gwadur to Fao passes very near Bundar Abbas (entrance to the Persian Gulf) and Bushire (the port for Shiraz).

Coming to the east of India, we have Rangoon half-way between Calcutta and Penang, 800 miles from each; and Singapore, half this distance south-east from Penang. On the coast between Calcutta and Rangoon there are only two small ports: Chittagong, 400 miles from Calcutta; and Akyab, 200 miles from Chittagong.

A line drawn up from Cape Comorin, in the direction of a little to the west of north, will pass through the most northern part of British India, in Kashmir; and will be about 1,900 miles in length. Another line drawn from Quetta, in the direction of E. 15° S., will pass through Mandalay, and this line will also be 1,900 miles long. This second line passes through the great plain of the Indus and Ganges, having the Punjab and the Himālaya on the north, and the great plateau of the Deccan on the south. The area of the country marked by these two axes is very nearly 1,600,000 square miles, or fourteen times the size of the United Kingdom. The population of British India is 314,000,000.

The above measurements are given, not only to assist the student in drawing maps of British India, but also because it is absolutely necessary to have a correct idea of the distances between the important places in this part of the empire before

attempting to solve any problems on the Military Geography of India. It must be remembered that the distances given are not along any line of rail or road, but nearly as the crow flies. More attention has been given to the distances on the west and north-west than on the east, because a knowledge of the former is more likely to be useful at present and in the near future.

With special reference to the Military Geography of the North-West Frontier of India, there was a most excellent and interesting article in the *Journal of the Royal Artillery* for December 1905, from the pen of Major (now General Sir George) Macmunn. In this article the learned author, after a few remarks of general historical interest, begins with a sketch of the First and Second Afghan wars. There is no short account of these wars more correct or reliable than this.* Macmunn directs particular attention to the battle of Charasia as a valuable tactical study for those who may aspire to command troops in countries like Afghanistan. He then introduces us to the *Durand Line*. This marks the frontier. It begins at 75° E. and 37° N. and runs west, along the crest of the Hindu Kush, and south of Wakhan, turning to the south direct west of Chitral. Here three passes lead from the Pamirs into British territory; viz. the Killik and the Baroghil into the Gilgit district, and the Dorah into Chitral. They are difficult, and open only for short periods in the year. Then there are: the Darkot Pass, between Yasin and the Baroghil; the Shandour, between Gilgit and Mastuj, over which Colonel Kelly's force moved into Chitral; the Burzil and Kamari, between Kashmir and Banji (south-east of Gilgit, on the Indus); the Babusar, leading from Khagan Valley (south-west of Nanga Parbat) to Chalis, and thence to Bunji, over which a column crossed in 1892.

The British boundary meets the Durand Line and the Afghan border near the Kunar river about 20 miles west of Dir; then goes south-west, a great part of the way nearly parallel with the Kunar, till it reaches Landi Khana, in the Khyber. From here the boundary runs nearly along the 34th parallel of north latitude till it gets to Peiwar Kotal. The Mohmunds live north of the Khyber; the Afridis border the Khyber, and furnish a Militia for keeping the pass secure. Between the Afridi Tirah

* The author has made a special study of the Afghan wars; in which he was very kindly assisted by the late Colonel Hanna, Mr. Howard Hensman of the *Pioneer*, and Sardar Ayoub Khan, who commanded the Afghan army at the battle of *Maiwand*. He has had the advantage of hearing both sides of the story of the Second Afghan war.

and the second strategic route to Kabul (the Kurram Valley) lies the Samana range and the tribe of the Orakzais. From the Kurram Valley the road to Tirah goes over the Chagru, Sampagha and Arangha Passes ; and another road leads through Ali Khel over the Shutargardan Pass, on the way to Kabul. From the Peiwar Kotal the frontier line bends south-south-east, till it gets to the north of the Tochi Valley, when it bends west, and then south, through the Waziri country, till it meets the valley of the Gomal river.

Below, that is, south of the Gomal Pass, is the Gwalari Pass. From where the Gomal river crosses the 32nd parallel of north latitude the boundary runs west by south to Chaman, near the Khojak Pass. From here the frontier trends west till it strikes the Persian Frontier in Seistan, at Koh-i-Malik Siah, 30° N., and from here south, meeting the Persian Gulf at Gwuttur, near the western bend of the river Desht.

The easiest line of communications between Eastern Europe and the north-west of India is the Trans-Caspian Railway. When the Russian General, Annenkoff, had successfully finished this railway, after the construction of such a work was asserted by some eminent Western engineers to be impossible, he wrote an article for a well-known Russian newspaper,* dealing with the strategical aspect of the railway, of which the following is a correct translation :—

“ When the railway reaches Samarkand, the Trans-Caspian region—the theatre of future events of world-wide importance—will be a reliable advanced post from which Russia will be able to counteract successfully the hostile designs of England. Russian troops, from the base Kazan, or the Caucasus, have only 360 versts from the Tedjent station to Herat, 430 versts from Herat to Kandahar, 200 from Kandahar to Quetta, and 320 from Quetta to the valley of the Indus ; altogether 1,310 versts.† The troops of Turkestan, in order to reach the same destination, will have only 1,290 versts to go from the station of Merv. At the same time, from the Russian outpost of Kilif, on the Amu Darya, which is now directly united with the railway by regular steam navigation, there are only 400 versts to Kabul, and thence less than 300 versts to Peshawar, from which point the Indian railways would convey a conquering army into the very heart of India.”

* The *Vestneek Evrope* (“ European Messenger ”).

† Altogether 867 miles ; the verst being 1,166 English yards.

This was before the 200 miles of railway were laid down from Merv to Khushk, and before the Orenburg-Tashkent line was completed and linked up with the Trans-Caspian line. The troops in Turkestan, who have a shorter distance to traverse on their way to India, will now be enabled to play as important a part on the Afghan frontier as the Trans-Caspian troops from the military centres of Askabad and Merv. Thus we see that there are two centres, both exercising equal control over strategic affairs on the Afghan frontier. There are also two lines of advance along which Afghanistan can be simultaneously attacked by Russia: one from Samarkand to Kabul, the other from Khushk to Kandahar.

[The above was written before the Orenburg-Tashkent Railway was completed. This railway starts from Samara, on the Volga; crosses the Ural at Orenburg; runs along the east of the Syr Daria, joining the Trans-Caspian Railway at Khojent, and opening up the rich mining province and coal-fields of Ferghana.]

The Products of British India.

It is recommended that the student should get an outline or blank map of India, and on it write the product of each place mentioned, as follows:—

Beginning at the delta of the Ganges, we have on the north-east of it tea-gardens; and, to the north of it, rice, sugar, tobacco and jute. To the north-west of it, the coal-fields of Raniganj, Jharia and Giridih; and, south-west of it, small workings of copper and iron. Going north-west from Calcutta towards Benares, we have more rice-lands. To the north of the Ganges in this stretch we get pine-apples; and to the south, teak timber. From Benares to Cawnpore we get indigo, opium and leather; while, going southwards from Allahabad, we pass through wheat, tamarinds and millet, in this order. Still going north-west, we now get into the country of sugar and mangoes; and, in the Punjab, wheat, cotton and salt. If we go through the Punjab, and down to Karachi, we find cotton, and sometimes wheat, where it is not desert; and, across the Indus, the Baluchis have plenty of millet and melons. From Karachi to Bombay it is a cotton and sugar country, with rice at intervals. Bombay is the cotton province, from north to south. Going on southwards from Bombay we pass through crops of rice, hemp, mangoes and sugar; and in the Province of Madras we get, going from Coorg to the south, coffee, hemp,

teak and tobacco. From Ceylon we get tea, cocoa, coconuts, ebony and rubber; and, on the west coast of the island, small quantities of plumbago. Going up along the eastern (or Coromandel) coast, from Madras to Calcutta, we pass through the district of ivory, rice and guavas. We also get ivory from Central and South Central India; and indigo from the French settlements (Pondicherry and Karikal) in Madras. There are green turtles and edible birds'-nests found in the Andaman Islands; and from the Nicobar Islands, on the south, 16 millions of coconuts are annually exported. A small quantity of gold is got from the Kolar mines near Bangalore. The best spices come from the Laccadive Islands, off the western (or Malabar) coast. The bamboo, which is becoming a valuable material for paper-making, is found all over India, but grows at its best in the United Provinces and the Punjab. As we go to the north from Rangoon, we pass from rice and tobacco to oil; and then again to rice and rubber. Some wool is exported from Sind and Bombay; manganese from the Central Provinces (Nagpur and Balaghat) and Madras (Vizigapatam); mica from Gaya and Monghyr, in Bengal, and Nellore in Madras. Before the war, "Cashmere Shawls" (made in Germany) used to be sold in Amritsar, and bought by tourists, or sent as presents to England.

In the Central Provinces (Mohpani, Wardha Valley and Chundwara) and in the Nizam's Territory (Singareni) there are large quantities of coal; but the coal is not of good quality, and the methods for mining are faulty. Iron ore is found in many parts of India; but up to the present no places have been discovered in which coal, iron ore and limestone are found in close proximity, as they are in the British iron and coal districts.

The trade of British India over the land frontiers is scarcely worth mentioning, in comparison with the trade over sea. It is carried on principally with Nepal, Kashmir, Afghanistan and Persia. Between fifty and sixty years ago, the Punjab Government, after great trouble and difficulty, successfully opened up trade communication with Yarkand. There was every prospect of a flourishing trade between the north of India and Central Asia: the tea-planters of Kangra and Kulu were looking forward to profitable markets, and at one time even hoped to cut out the sale of the Chinese "brick tea" which used to be sent along the *Trakht* route to Russia. Great numbers of the sure-footed and hardy Yarkandi horses and ponies began to

come to the Amritsar fairs. But the semi-independent ruler of Kashmir, through whose territory the new trade-route passed, clapped on a duty of not less than 40 per cent. *ad valorem* on all the articles of commerce passing through his territory ; and this was more than the young growing trade was able to bear. The merchants and tea-planters appealed to the Indian Government ; the most powerful and successful ruler in Central Asia, YakooB Beg, not only tried to keep the door open, but also expressed his wish for an alliance with England. Yet the Kashmir ruler was allowed to have his way, and thus the Central Asian markets fell into the hands of Russia.*

Generally speaking, India has only three seasons in the year : the hot season, during March, April and May ; the rainy season, from June to October ; and the cool season, from November to February. The prevailing winds, called *the monsoons*, blow from the south-west from April to October, and from the north-east from October to March. The soaked steamy soil, towards the end of the rains, make September the "fever month." As India extends from 8° to 36° north of the equator, and rises from the sea level to a height of 5 miles, it has naturally great varieties of climate. There are large districts in the Indus plains, on the west, where the rainfall is never more than 2 inches in the year ; while in the Khasi Hills, on the north-east, the annual rainfall is 500 inches or more. The Himālaya Ranges are the greatest blessing to India : not only as an impassable barrier of defence against invasion from their direction, but also because they protect the Indian plains from the bitterly cold winds which blow over the deserts of China, Central Asia and Tibet. Still some very cold winds blow over the north-west of India during the months of January and February ; and the southern limit of snow-fall is marked by a line joining Attock (on the Indus), Rawal Pindi, Lahore, and going on south-eastwards, a little to the north of Lucknow and Calcutta.

But there are also parts of India where very hot winds blow, off and on, from June to August ; and these places should be avoided, if possible, by troops on the march, or those who are being transported by rail during the hot weather. The worst of these dangerous winds are to be met in the plains of the Indus,

* *Report on Trade Communication between India and Central Asia.* By Sir Douglas Forsyth, 1876.

on the line between Karachi and Multan. On certain days and nights in June and July, a deadly, blasting wind comes up from the desert north-east of Kotri. This wind is called in the Sindhi dialect "Luka," and in the Punjabi, "Jhola." When the Jhola begins to rage, any European sleeping on the roof of his bungalow in Multan is compelled to get up and walk about for a couple of hours, feeling his thin night-clothes like sheet-lead, and with a wet towel round his head. When the blast is at its worst, even the most healthy man and one accustomed to the Indian climate, travelling in a first-class carriage and provided with all comforts and convenience, electric fans included, will be very lucky if he manages to keep alive till he gets to Multan. Yet, in June 1916, a troop-train packed with British soldiers, none of whom had ever been in India before, was sent through this inferno, from Karachi, for Lahore and Rawal Pindi. That many of the poor fellows never reached their destination is nothing to be surprised at; for, during the journey between Kotri and Sukkur the troop-train was passing in front of the open door of a furnace at full blast; and the wonder is not that so many of the men died, but that any of them should have survived.* Bad as it was, yet if the train had been kept on the move it would have created some little breeze by its motion. But it frequently pulled up and waited at small, dreary stations, without any apparent object or reason. These halts were not made for the want of water or coal: no passengers got in or got out; yet the train was kept standing at some of these places for more than half an hour, exposed to the full force of the sweltering, deadly blast. And the most extraordinary thing about the "official inquiry" into this tragedy is that from the beginning to the end of it not a word was said nor a question asked about the natural causes of it.

Lack of knowledge of the physical geography of India, and of the varying conditions of its weather and climate, has more than once been the cause of heavy losses in money and material, not to mention loss of human lives. When the authorities of the South Indian Railway decided to open a new port on the south of the island of Rameshwaram (between India and

* For the statements given here the author has authentic evidence collected from people living in Kotri, Khairpur and Sukkur, including that of an officer of the Public Works Department, an European gentleman of long experience in India. A gallant and distinguished military officer, of long and honourable service, was held responsible and punished for the effects of the *Jhola*.

Ceylon), they very probably looked at the question in the following manner: The South-West Monsoon comes from the south-west, and the North-East Monsoon from the north-east. Therefore what we have to do is build a pier and jetty on the north-east of our new port, to be used during the South-West Monsoon, and another pier and jetty on the south-west, to be used during the North-East Monsoon. This was done: it sounded so clear and simple that nobody could have had any objection to it. But the fact which never entered their minds was that there are rivers in the ocean as well as on land; and that one of these rivers, called "The North-East Monsoon Drift," or Current, has a way of tearing across from the shores of East Africa and dashing into the narrow strait between India and Ceylon. So during the North-East Monsoon they found to their astonishment that their south-west pier and jetty were not doing well; in fact, were being quickly washed away. And until their chief engineer was enlightened by an ancient mariner, captain of a Colombo "wind-jammer," with regard to the physical geography of the Indian Ocean, they kept on patching and shoring up the south-west pier; after which they gave it up as a bad job, and "used disrespectful words" about the Equatorial Currents.

The Principal Railways in India.

Three important railways lead across India from Bombay. The Bombay, Baroda and Central India Railway runs to the north, through Surat and Baroda, to Rutlam junction. On the way, near Baroda, it throws off a branch to the west, into the Kathiawar district. From Rutlam a line goes northwards through Ajmer, Jaipur and Bikanir; connecting with the North-Western Railway system at Bhatinda junction (100 miles south of Amritsar). Another line goes from Rutlam eastwards through Ujjain to Bhopal. Here it turns northwards, and goes through Jhansi, Gwalior, Agra and Muttra (in this order) to Delhi. From Jaipur a branch runs westwards to Sind, crossing the Indus at Haidarabad, and so to Karachi.

The Great Indian Peninsular Railway—by far the best in India—runs first to the north-east, through the Thal Gap, in the Ghauts, past Deolali, to Bhusawal junction. From here a line runs north and north-east, having the Mahadeo Hills and the station of Pachmari on the right; and, passing through Jabalpur, goes on to Allahabad. Another branch goes from

Bhusawal eastwards, through Nagpur, Raipur and Bilaspur, to Calcutta.

The direct railway from Bombay to Madras goes through Poona, Sholapore and Hoogti. From Madras there is a railway through Bangalore, and to Calicut (on the Malabar coast), and the South Indian Railway by which travellers go to Ceylon.

From Calcutta we get by the Bengal Railway, or East Indian Railway, through Patna and Benares, to Allahabad. And from here we go, by the North-Western Railway, through Cawnpore, Ghaziabad (junction), Meerut, Ambala, Amritsar, Lahore, Rawal Pindi and Attock, to Peshawar. From Cawnpore, a loop line runs north and north-west, through Lucknow and Bareilly, joining the main line again at Ambala. A small branch runs from Ambala to Kalka, for Simla; and another branch from Golra (near Rawal Pindi) to the south-west, crossing the Indus to Kohat, an important military post in the North-West Frontier Province.

A line (N.W.R.) goes from Lahore, through Multan, to Karachi, crossing to the right bank of the Indus at Sukkur. Here is Rukh junction, from which a branch runs through the Bolan Pass to Quetta. This branch bifurcates at Sibi, one part going northwards by Hurnai, and joining the Quetta line again at Bostan. A continuation of this line is carried on to Chaman, on the Afghan frontier on the way to Kandahar (75 miles from Chaman). Another branch of this line runs south from Attock, through Campbellpore, skirting the left bank of the Indus, and joining the Lahore-Karachi line at Sher Shah, a little to the west of Multan. And a small line runs from Peshawar to Fort Jamrud, at the entrance to the Khyber Pass.

Other means of Internal Communication.

In proportion to the extent of the country the roads in India are few and bad; and most of them are unmetalled, owing to the absence of suitable stone in the plains. Although India has a great many large rivers, yet none of them is of any use as an inland waterway except the Ganges, which is navigable for 1,000 miles, nearly up to Hardwar, where it issues from the Himalaya. But where it falls into the sea, by its chief mouth of the Hoogly, it has the fault of all the other great rivers of India: shifting sandbanks, a shallow estuary and a rapid current. It is to be hoped that when a strong United India devotes her thought and energy to the arts of peace and the ways of progress,

she will make better use than she has done up to the present of the blessings she enjoys in the possession of some of the greatest waterways in any country of the world. England has taught her how to make the desert blossom as the rose ; and if the whole British Empire were to sink into nothingness to-morrow, there would be still one thing for which British rule in India deserves to be held in everlasting and grateful remembrance, and that is irrigation.

The Indian Fighting Races.

There are good recruiting areas for the army, in certain parts of India, while there are large districts which have never produced, and are never likely to produce, good soldiers. It will be seen that the physical geography and the political history of the various areas have had a good deal to do with this difference in the nature of their inhabitants.

Speaking of the military strength of the British Empire at the beginning of the war, Lord Crewe described the Indian recruiting field as "not an inexhaustible reservoir." Still it is a broad and deep reservoir. With the exception of China, India is the most thickly populated country in the world, and a most fruitful ground for recruitment. Taking one able-bodied recruit for every hundred persons of the population, India could produce 3 millions of men to be enrolled as soldiers ; and if only means could be found to turn them into efficient fighting material, India should have no difficulty in conquering all the East. But India has been long tasting the peace and calm of quiet days under the might of the British Raj. A hundred years of peace has in many places laid to sleep the old military spirit of India. The old Indian civilisation counted the gift of the military spirit as necessary to national existence ; and that this spirit still survives has been fully proved during the war.

The "Fighting Races" of India are : the Sikhs, the Mahrattas, the Rajputs, the Jats, the Dogras, the Baluchis, the Pathans and the Punjabi Mussulmans. The Ghurkas do not belong to British India ; they come from Nepal.

A third of the Indian army is composed of *Sikhs*, who come from the Punjab plains between the Sutlej and the Jhelum. The Sikhs are not a race, but a military caste bound together by the tie of religion. A strong religious sentiment and sterling military ability are the two traits in the composition of every Sikh. They are noted for their brilliant bayonet charges.

Holding the butt of the rifle with both hands, they mercilessly thrust the steel between the ribs of their enemies. They sometimes wear quoits round their turbans. These steel discs, razor-edged, they fling with great force at the head or neck of the foe, and rarely miss. In the thick of the battle the Sikh is cool and resolute; and though he has not quite so much dash as some other soldiers, he more than compensates for this lack by his immunity from any tendency to panic.

The *Mahrattas* are recruited in the Bombay Presidency, Konkan and the Deccan. They have been called the "Cossacks of India"; and they possess in an exceptional degree two of the most essential military virtues—sturdiness and tenacity. Rough riding across country has been their speciality since the beginning of the sixteenth century, when they first prominently figure in Indian history. The Court historian of Akbar said of them: "They are particularly adept at rapidly dashing into an enemy's country, delivering a deadly blow, and then safely retreating." In Mesopotamia there were no Indian troops who fought better than the Mahrattas.

The *Rajputs*, the professional military caste of India from time immemorial, have always been men of high and noble sentiments, and lofty ideals. Pride of race is their chief characteristic, and their one ambition has ever been to wield the sword. Of fine physique and martial bearing, they formed the backbone of the old Bengal army, and have upheld the British flag in every campaign in the East. In the regular Indian army at the outbreak of the war they numbered 12 squadrons of cavalry and 100 companies of infantry. They were never completely conquered by the Moghuls, but were driven out of the fairest parts of their lands to the inhospitable deserts on the east of the Indus. The greater part of them are recruited from this area and from the Punjab.

The *Jats* (the *Gætæ* of Herodotus) are a fine warlike race, found in the Punjab, Rajputana and the United Provinces. Tall, large-limbed, and often of handsome appearance, they rank among the best of the military tribes. They furnish the Indian army with 21 squadrons of cavalry and 60 companies of infantry. From 1805 to 1827 they held out against the British in their famous fortress of Bhurtpore.

The *Dogras* come from the country between the rivers Sutlej and Chenab. They may be called the "Rajput Highlanders." They have a keener sense of national pride and a higher feeling

of national integrity than their compatriots of the plains ; while the more bracing climate of their hills has given them a fine physique and a clear complexion. The Dogras serve chiefly in the infantry. There are 11 squadrons and 56 companies of this caste in the regular Indian army. The Dogra is a shy, reserved man, with considerable strength of character. He may not be so brilliant as the Pathan, nor so tenacious and subtle as the Ghurka, but he has a high idea of honour, is very self-respecting, and makes a capital soldier. The recruiting headquarters for the Dogra is the Kangra district in the north of the Punjab.

The *Baluchis*, or the Moslem clans inhabiting Baluchistan, claim Semitic descent and kinship with the founder of their religion. They are tall, imposing-looking men, with regular features. They have the manly, strong nature of the Pathans, with a fund of patience rendering them capable of enduring endless hardship ; a fine dignified carriage and physique combined with a spirit of quick daring and sudden ferocity. There are more than fifty Baluch tribes, from which the Baluchi regiments are recruited. As a soldier, the Baluchi shows a strong adherence to discipline, is loyal and honest, and many of them are first-rate marksmen.

The *Mussulman* tribes, of mixed Aryan, Afghan and Scythian origin, who inhabit the countries round about Afghanistan and North-West India, and their descendants who have migrated to various parts, are generally known as *Pathans*. They claim Jewish descent, from the royal house of King Saul of the Hebrews ; and they call themselves *Beni-Israel* (sons of Israel). They furnish 70 squadrons of cavalry and 250 companies of infantry to the regular Indian army. The cold climate and the hardy life of the mountains have preserved their virility. They are tall, stalwart, handsome fellows, with regular features and fair complexion, many of them with blue or grey eyes. As a soldier the *Pathan* displays great dash and courage. Owing to his passionate nature he is sometimes apt to lose his head in the heat and excitement of battle ; and this places him at a disadvantage as compared with cooler-headed men who are otherwise his inferior. In British service he has generally proved himself a loyal and devoted soldier.

The term *Punjabi-Mussulman* is used to describe the many minor fighting-clans inhabiting various parts of the Punjab ; such as Ghakkars, Awans, Gujars, Tiwanas, and so on. These

people are ethnically Aryo-Scythians, the descendants of Hindu converts to Islam. They probably provide more soldiers for all branches of the Indian army than any of the races already dealt with. They make first-class soldiers, are easily disciplined, and become good marksmen. The *Ghakkars* are a brave, high-spirited race; the *Gujars* hardy and well-built; the *Julahas* turbulent and bumptious; the *Bhattis* tall and muscular. It may be generally said of them all that they are more influenced by self-interest than by any ethical notions of right or honesty.

Jeshurun

“ But Jeshurun, thou hast waxed fat, and kicked; thou hast grown big, and thou hast forsaken Him that made thee.” (MOSES, Leader of the Hebrews.)

There is an affectation among a certain class in England that the loss of our great dependencies, possessions acquired with a vast expenditure of life and treasure, would be the cause of no serious or lasting injury to the British Empire. This has been said particularly with regard to the loss of India. The people who say it are of a stamp not generally accustomed to carry any argument to a logical conclusion; yet it is not very difficult to comprehend the consequences which insult and spoliation unchecked might bring upon their victim; nor is it hard to imagine that when a man's limbs are lopped off the subsequent process of cutting his throat or bleeding him to death becomes greatly simplified.

Is the Eastern limb to be lopped off? India, like Jeshurun, has waxed fat, and kicked, and is now making efforts to forsake the great Western Power to which she owes her very existence as a modern civilised nation. It requires no divine gift of prophetic inspiration to conceive the troubles and calamities which would fall upon India, upon England, and upon humanity in general, should the separation take place. The dislocation of commerce, the disorganisation of the world's trade, the fall of all public securities, the agitation of popular feeling, East and West, revolutionary flames lighting the plunder and massacre from Baluchistan to Burmah, and the heavens black with vultures from the east, north and west, to settle on and devour the Indian carcass. These are only some of the results which, as certain as sunrise, will follow what it is now the fashion to call the “Indianisation” of the great Dominion and its services.

To India particularly, British rule has meant peace, prosperity and wealth. And the wealth of India constitutes one of its greatest dangers, if not adequately guarded, but its best foundation of defence if properly employed. Any nation that cannot or will not guard its wealth deserves to lose it; and the magnitude of the losses incurred in its defeat is immeasurably greater than the highest expenses for its defence.

Can India, without British assistance, defend herself against attack? In reply, let us hear what a most excellent authority on Imperial Strategy—Colonel Repington—has to say about it:

“If the New Indian army which we are creating to please the reformers can defend India, it will be the first Indian army that has ever achieved that object. Certainly there are people enough to succeed, for the population is close upon three hundred and twenty millions. But with two hundred and twenty languages in the sub-continent, with all the different races and religions, with less than two million Indians understanding English, with only ten per cent. able to read and write their own language, no such military problem has ever been as to create a purely Indian army in anything but the name. Shall we ever see an Indian army fit to defend India without us? Probably not; for it will be in the future as in the past, that India will not follow one Indian leader, nor accept a single stern Indian discipline, nor indeed obey any one or anything except the local Indian ruler or agitator. The feud between the two hundred and twenty million Hindus and the seventy million Mohammedans* will break out in flame so soon as the two have no longer the English to combine against; while the Buddhists in Burmah will set up for themselves. The *Pax Britannica* has been equalled by nothing in the past but by the *Civis Romanus Sum*; and this dream of creating an India, and still more of defending it, without the British, will pass like other visions of the night.”†

If those who are responsible for the defence of India have an earnest desire to perform their duties seriously, intelligently, and effectively, they should begin by forming into one **Military Frontier Province** the present territories of Kashmir, the North-

* A certain professor of mathematics and student of ethnography, of Calcutta University, in a letter to the author, said: “The Hindus and Mohammedans will complete the *circle* of Indian union, being as the circumference and diameter; namely, 22:7!”

† *Daily Telegraph*, March 26, 1923.

West Frontier Province, the Punjab and Sind. In this Province they should establish and support a British Long Service army of not less than 150,000 men, for whom Kashmir would form a sanatorium, and a retreat during the hot weather. The seaport of the new Sentinel Province would be Karachi, and its capital Rawal Pindi. The Indus and its tributaries would be canalised, so that large vessels could trade inland as far as Ferozpur, Lahore, Jhelum and Attock. Following the excellent advice of General Hamley, strongly entrenched camps would be established, and held, at Chitral, Landi Kotal, Thal, Khajuri Kach, Loralai and Quetta. If possible, arrangements should be made with the Afghan Government for keeping up a strong advanced position at **Charikar**, to smash the heads of invading columns coming over the Hindu Kush Range, by the Khawak, Kaoshan, Chahar Dar, or Shibar Passes. The garrison of Charikar should not be a mixed one, and should include no Pathans. The back door in the east of Kashmir should not be left unbolted. The routes between Eastern Turkestan and India are, no doubt, very difficult for an invading force; still it would be a fatal mistake to ignore them altogether. In Asiatic military history, what has been done before can be done, and has been done, again; and even so far back as the year 1543, Mirza Hyder of Turkestan and Sekunder Khan of Kashgar invaded and conquered Kashmir, after crossing the Karakorum Pass into Ladakh, while sending their camels and baggage round by the lower Changchenmo Valley.

I am quite aware that these suggestions of mine can be easily torn into tatters; that the mean and cowardly libels about the army of the old East India Company will be served up as argument against the idea of a "Long Service British Army"; and that the sacredness of the integrity of Kashmir will be put forward as of more importance than the defence of India.

But, with regard to the first of these: Those who have read their history of British India aright will agree that a more contented, a more valiant, a better behaved, or a more efficient body of soldiers than the British troops of the old East India Company never existed, in any service, in any country, or at any time. They never counted the long odds against them in battle, and no enemy ever saw their backs. And to-day, a British force enlisted for service exclusively in India would be most popular with the classes which have always furnished our best recruits and there would be no difficulty in raising it to the

necessary strength, and including in it many hard-bitten veterans experienced in war.

The service of the East India Company was always attractive to the British soldier; and no difficulty was experienced in getting recruits. Desertion from the service was scarcely ever heard of; mainly because the Company's soldier was better paid, better fed, and better treated than his comrades in England; and he occupied a social status in India which raised him above the class from which he had sprung. Sure prospects—not the mere empty twaddle about the imaginary Marshal's baton in his knapsack—were held out to his ambition. The career of a steady, sober soldier, with a certain amount of education, always meant for him a rise in life; the numerous instances of men from the ranks who had attained high success and affluence were the subject of many a narrative round the Indian camp fire. Aspirations, which not unfrequently fulfilled themselves in the future, brightened for the present the hardships and discomforts of the soldier's life in the East. Against an army of 150,000 men, composed of such soldiers as these proved themselves, and augmented in time of danger by 200,000 Indian troops, the fiercest and most threatening waves of Turkoman, Tartar, or Afghan invasion would be quickly shattered and scattered in empty foam. And behind such an army no regular troops would be necessary in all the rest of India. Small local militias, with well-trained and well-paid bodies of civil and military police, would be quite sufficient to maintain order and to keep the peace.

Coming down to hard figures and present facts, it may be mentioned that the average cost of one British battalion in India, in the year 1921, was £150,000, while the cost of one native battalion was only a little over £30,000. So that the "reformers," at whom Colonel Repington hits, have had good reason to agitate for reform, if it were only on the ground of expense and nothing else. The expense of each British battalion in the Defensive force that has been suggested would not be half that of the old battalions; for the item of transport over land and sea would disappear altogether, while supplies, clothing, buildings and so forth would be much cheaper and more convenient.

With regard to the sacred integrity of Kashmir the first fact which it is only right to recall is that it was the Maharaja of Kashmir, and no other, who ruined and destroyed India's commerce with Central Asia. Full proof of this statement is to be found

not only in the pamphlet published by Sir Douglas Forsyth, in 1876, but also in a book which is, perhaps, not so well known, written in 1878, by a certain Captain Kouropatkin of the Russian General Staff—afterwards the well-known General Kouropatkin who commanded the Russian armies in Manchuria (1904–5)—the title of the book being *The Anglo-Russian Frontiers in Central Asia*.* The Russian author pays high compliments to the Maharaja of Kashmir, for his kindness to Russia in keeping British competition out of her central Asian markets.

Kashmir has a Mohammedan population on whom, about seventy years ago, the Indian Governor-General forced a Hindu ruler, Gulab Singh. This Gulab Singh had been one of the favourites of the Old Lion of the Punjab, Ranjit Singh, to whose Court he had come as a youth, “with chalked feet”; and, after Ranjit’s death, Kashmir was sold to Gulab Singh, by the East India Company, for the sum of £750,000. Of this, Gulab paid £400,000 which he had raised mainly by plundering and murdering British subjects in British territory.† While professing the most grovelling loyalty and sincerest friendship for the English, he sent down from Kashmir a native contingent to fight on the side of Shere Singh against them, in the Chilianwala Campaign, of 1849. But Shere Singh had estimated Gulab’s character far better than did the Governor-General. “Place the old jackal’s coolies ‡ in front of the Khalsa infantry, and chain his artillery-men to the wheels of their own guns,” were Shere Singh’s orders for the Kashmir contingent on the morning of Chilianwala.

Speaking afterwards of Gulab Singh, the Governor-General used these words: “He is the d——dst scoundrel that ever drew breath, a scoundrel from a kingdom down to a halfpenny.” Yet the noble and eminent grandson of this same Governor-General, speaking on the occasion of a recent public function in Kashmir, employed terms of eulogy to the third in descent from Gulab Singh on the Kashmir throne, terms which would have been gross flattery if applied to the character and qualities of the

* For those who cannot read Russian I would recommend the French translation of this book, by G. Le Marchand; published by J. Dumaine, Rue et Passage Dauphine, Paris; 1879.

† *Central Asia: from the Aryan to the Cossack*. By James Hutton, editor of a Calcutta newspaper, 1870. Hutton got his facts from a British officer, Hayward, who had been cashiered for telling the truth about Gulab Singh.

‡ Gulab Singh’s infantry. The regular Sikh Army was called the “Army of the *Khalsa* (exalted in reputation).”

stately Akbar or the renowned Caliph Aaron the Just (*Haroun al Raschid*). Which is a proof of the moral progress, in character and virtue, of native Indian princes under the benign influence of British rule.

When the hurricane bursts over Central Asia, the new Republics—all Mahommedans, to a man—will endeavour to see to it that their brother Mussulmans in Kashmir are liberated from the rule of the “sons of burnt fathers”; and then the only thing to save the lands of the Indus, and India itself, will be something in the nature of the *Military Frontier Province*, as here set forth.

The Dominion of Australia

Australia is the isolated Continent. It is as far from England as it could possibly be on the surface of the globe; and its nearest neighbours to speak of are 500,000,000 of the Yellow Race across 2,000 miles of water. It is nearly as large as Europe, and not so large as Canada: its area being about 3,000,000 square miles. Its greatest length from north to south is 2,400 miles, and its greatest breadth from east to west is 2,500 miles. Its population is between 4,000,000 and 5,000,000.

This great Commonwealth is composed of six States, which are separated by the natural boundaries of Bass Strait between Victoria and Tasmania; the river Murray between Victoria and New South Wales; and partly the river Darling between New South Wales and Queensland. The boundaries between the other States are what Lord Curzon called, in his lecture on *Frontiers*, astronomical: parallels of latitude and meridians. Beginning at the south-east, and going by east to north, we have Victoria, New South Wales and Queensland. On the west of these three States is South Australia, stretching right across, from south to north; and the great block on the west of this is Western Australia. The respective areas of these six States, in square miles, are: West Australia, 976,000; South Australia, 905,000; Queensland, 672,000; New South Wales, 310,000; Victoria, 88,000; and Tasmania, 26,000. Of these, the most thickly populated is Victoria, with 15 persons to the square mile; while West Australia has only 3 persons for every 10 square miles of its area. Australia lies between 11° S. and 39° S. latitude; and between 113° E. and 153° E. longitude.

The coast of Australia resembles that of Africa in having only a few great openings; and for hundreds of miles, especially

along the south, west and north coasts, there is nothing which deserves the name of a port or harbour. The best harbours are in the south-east and east. There are also some harbours in the Gulf of Carpentaria, on the north of Queensland; but these are confined by steamy, rotting mangrove swamps, which render them not only useless but noxious. The "Great Barrier Reef" runs nearly parallel to the coast of Queensland, from Torres Strait to 22° S. latitude, a distance of 1,200 miles, generally about 15 miles from the shore, but in some places nearly 100 miles. This forms a sort of natural defence for the coast; the reef in some parts is nearly 100 miles broad; and though there is plenty of depth between it and the mainland, still the passages through it require careful navigation. It is scarcely possible that any hostile fleet would ever think of invading this part of the Australian coast; the risks would be too great for any advantage that might be gained. Going further south along this coast, the port of Brisbane could be easily defended from Moreton and Stradbroke Islands; but Port Macquarie, Newcastle and Sydney are dangerously exposed. Melbourne and Adelaide could make it very uncomfortable for a naval invading force; then there are the steep and massive cliffs of the great Australian Bight and a thousand miles of inhospitable shore before King George's Sound and Albany are reached. The only place of importance on the west coast is Perth; but it is not at all likely that any invading force would make this a primary objective. And as for Port Darwin, on the north coast, even if it were taken, it would prove of no value, strategically, politically, or commercially, to those who might capture it.

In the Military Geography of Australia, the most important factor at present is the railways in the country. When Lord Kitchener was sent to Australia, to report on the defence of the Commonwealth, he said: "While developing the country, railway construction has resulted in *lines that would appear to be more favourable to an enemy invading Australia than to the defence of the country*. They would prove of considerable value to an enemy who had temporary command of the sea." The truth of this great soldier's statement in this respect will be evident to us when we have taken a glance at the railways. Let us begin at the west coast, north of Perth, and go by south, east and north, round the coast.

From the small port of Geraldton a railway runs 200 miles

into Nannine, in the hinterland. This leads to nowhere ; but there is also a coast railway, by which a force landed at Geraldton could get safely and comfortably to Perth, in seven or eight hours. From Perth a line runs along the coast through Fremantle ; and another line through Northam, to Albany ; then the eastern extension through Coolgarlie and Kalgoorlie, to Port Augusta on Spencer Gulf, in South Australia ; the length of this section being 1,053 miles. Spencer Gulf is broad and deep, and 200 miles in length ; and the entrance to it is through straits between a number of small islands and Yorke's Peninsula. These straits could be mined, and Yorke's Peninsula made a second Gallipoli ; but still Port Augusta would be no more "impregnable" than Port Arthur proved to be.* From Port Augusta the line runs down to Adelaide, on St. Vincent Gulf, which could be defended by Kangaroo Island. Between Adelaide and Melbourne (480 miles) the line keeps away from the coast ; and the entrance to Port Phillip Bay, which runs up to Melbourne, could be very easily protected by the land on each side. From Melbourne to Sydney (580 miles) the line runs well inland ; but from Sydney to Brisbane (700 miles), and on from Brisbane through Maryborough to Rockhampton, it hugs the coast. More to the north, Townsville, on the coast, is the terminus of a line 500 miles long, which runs west to Cloncurry ; and above this, Cairns has a line more than 200 miles long, which runs towards the head of the Gulf of Carpentaria.

There is now a scheme on foot for a line right across the Continent, from north to south, to join Darwin in the Northern Territory with Adelaide. In this direction there is already a small line, 200 miles long, from Darwin to Katherine, in the north ; and another section, from Adelaide to Oodnadatta, 700 miles long. But there is a long stretch of 1,008 miles between Oodnadatta and Katherine, through a bare and barren country. So that what will probably be carried out is the linking up of the Darwin-Katherine line with the more profitable country on the east, namely with the present termini of Cloncurry, Winton, Longreach, Cunnamulla, Bourke and Broken Hill. This inner circle would render communication easy between all the most important parts of the Commonwealth, and form a convenient and extended base for supplies and concentration. It would also

* Military students are recommended to read and remember the chapter on "Fortresses," in Colonel Repington's *War in the Far East*, a chapter as interesting and instructive as anything written by Napier or Henderson.

develop territory which, though dry, is very suitable for sheep, and which is believed to be rich in metals. Its strategic and economic advantages would be considerable; and would be much increased under a sensible policy of developing the tropical lands by coloured labour.

Whenever Lord Kitchener spoke of railways he knew well what he was talking about. Therefore when he said that the Australian system of railways were in favour of the invader, he remembered that as his own railway in Egypt had materially assisted him in pulling down the Dervish Empire, so would the railways by and from the Australian coast prove ruinous to Australia, from a strategic point of view. If the centre of Australia were a rich and flourishing country, with large manufacturing towns and great centres of distribution, as is the case in the middle of England, then it would be quite a different matter. But no invader would ever think of making the Central Australian Desert a strategic objective; and an army fighting with such a terrain at its back would be in a condition of all the most hopeless.

With regard to Australia's external connections, the very quickest route from Great Britain and Europe to Australia would be by the Siberian Railway to Port Arthur (Dalny), and then by fast steamer from Dalny to Darwin.

Owing to its geographical position, Australia must look upon the question of invasion as first of all a naval question. But this does not mean that the Australian army will not have to play an important part in it. Admiral Mahan and Sir George Aston have very clearly laid down the best and most profitable way in which this can be done. A land army will always be able to assist most effectively in naval strategy by holding the defended harbours for the fleet. As Admiral Mahan plainly points out and proves, no defended harbour, however strong, can be correctly said to "command" any land or water outside the range of its own guns. Gibraltar does not command the Mediterranean, nor does Thursday Island command Torres Strait. Therefore the part to be played by the Australian army should be clearly understood to be the holding of the defended harbours in strength, keeping their reserves back in convenient positions, with good lateral communication along their new and improved system of railways.

The line from Fremantle in West Australia to Adelaide will

make a difference of three days in the delivery of English mails in Melbourne and Sydney, since the distance is only two days by rail against five by steamer.

The greatest drawback to railway travelling in Australia is the difference between the gauges. If a man wishes to travel round from Brisbane to Perth he has first of all to change carriages on entering New South Wales. He reaches Sydney next morning, and leaves by a different train in the evening, on his way to Melbourne. At the southern border he is pulled out of bed, to change over to the Victoria system, which is on a wider gauge. Getting through to Melbourne undisturbed, he stays there for three hours. The same gauge, but not the same train, will carry him to Adelaide, and from Adelaide to Terowie, 120 miles to the north. Thence he transfers to a 3 feet 6 inch gauge, a wretched means of conveyance; and goes cooped up in this series of boxes till he lands at Port Augusta. Now for a thousand miles he is safe from molestation till he arrives at Kalgoorlie. But here he is bundled into another 3 feet 6 inch train, and goes on until he finishes at Perth.* The gauges' question came before a conference of engineers in 1913. It was found that the cost of converting all the other lines to a uniform gauge of 5 feet 3 inches would be £51,600,000; while to convert them to a 4 feet 8½ inch gauge would be £37,150,000. It is more than probable that the Federal Government will adopt the cheaper plan, and save the extra £14,000,000.

The principal ports of Australia, with their population and trade, are :—

Melbourne (540,000); wool, gold, wheat, meat, butter and wine. Sydney (580,000); wool, ores, wheat and meat. Adelaide (178,000); wool, copper, hides and gold. Newcastle (65,000); coal, wool and meat. Fremantle (25,000); wheat, sandalwood, timber and wool.

These five ports are given in the order of their volume of shipping and tonnage. The other important towns are : Brisbane (136,000); gold, wool, cotton and tallow. Perth (50,000); inland, from its port Fremantle. Ballarat (50,000); inland. Bendigo (45,000); inland. Hobart, in Tasmania (43,000); wool, grain, timber, hops and tin. Broken Hill (31,000); inland. Kalgoorlie (30,000); inland, and Geelong (30,000).

* The *Times* : Imperial Supplement.

The principal export from Bowen, in Queensland, is gold ; and from Cairns, higher up on the same coast, gold, silver and tin. Mackay, and Townsville, in Queensland, export sugar ; pearl shell is exported from Thursday Island, in Torres Strait ; and about 500,000 tons of copper annually from Wallaroo, on the eastern side of Spencer Gulf in South Australia.

The principal Australian imports are nearly all from England, with the exception of : oils, tobacco and timber, from the United States ; jute-bags and sacks from India, and tea from Ceylon.

If her neighbours, the Malays, are wise they will be careful not to quarrel with Australia ; for not only does the great Commonwealth supply them with food, but also with other necessities of life. She supplies Japan with wool, tallow and wheat ; China with copper and timber ; Java and the Philippines with flour, where the people cannot make it for themselves ; and she also sends large quantities of flour to the Straits Settlements. The Philippines are entirely dependent on her for meat, frozen and carefully kept in good condition ; and they get all their coal, too, from her port of Newcastle. She sends large quantities of butter to Java, horses (" walers ") to India, and sandalwood to Hong Kong.

Going further away, she supplies Chile and Peru with wheat, and South Africa with frozen beef and mutton, as well as timber. She can well afford the timber, for she has, on the east of the Darling Range of mountains, a forest of jarrah wood as large as the whole of Great Britain.

Some of the largest rivers in the world are to be found in Australia. The total length of the river which at various parts of its course is called the Condamine, Darling and Murray, is 3,800 miles. The river called the Murray is 1,600 miles long, and is navigable to Echuca, 500 miles from the sea ; the Darling, 1,760 miles long, is navigable as far as Walgett, 800 miles from the sea ; and the Murrumbidgee (1,100) is only looked upon as a tributary of the Murray, and is navigable to Hay, 100 miles from the junction of the two rivers. The average fall of all these streams is less than 1 foot per mile, and they are certain to play a very important part in the future development of Australia.

A depression near the middle of South Australia contains Lake Eyre, which, for inland drainage, is something like the Sea of Aral in Central Asia, or Lake Tchad in the African Sahara.

If on a map of Africa, a line be drawn eastwards from the Kameroons, then southwards, to include the sources of the Nile, and continued to the Indian Ocean, the land above this line would be something very like the continent of Australia, not only in shape, but in its Physical Geography. The high lands of Abyssinia would correspond to the "Great Divide" in the east of Australia; and the Nile (but running in an opposite direction) to the Murray-Darling.

Australia is well supplied with submarine cables. A cable goes from Perth, by the Keeling Islands and Mauritius, to Africa. Another goes from Broome, in the north-west, to Singapore; and there is also one from Palmerston, in the north, by Bali Strait (Banyowangi) east of Java, to Singapore. Broome has direct telegraphic connection with Adelaide, right across the Continent. On the south, Fremantle and Adelaide are connected both by telegraph and cable; and the latest "wireless" installation at Perth is said to have a radius of 12,500 miles, thus commanding half the surface of the globe. Melbourne and Launceston are connected by a short cable across Bass Strait; a cable runs from Sydney to Wellington, in North Island, New Zealand (1,280 miles); and an important section of the "All Red" cable goes from Brisbane to Norfolk Island, then on to Suva in the Fiji Islands, and through Fanning Island to Vancouver. All these cables are British; and then there is a French cable which runs from Bundaberg, in Queensland, to Gomen Bay, in New Caledonia. The distance from Sydney to Vancouver (Victoria) is 6,600 miles, almost exactly the distance from London to Bombay (by sea). From Formosa, now the most southern part of the Japanese Empire, to Darwin in North Australia, is 2,600 miles; the north-western and western parts of Australia are much nearer to Asia than the eastern parts.

Australia has gone ahead of the Mother Country in many things,* and has even proved herself able to teach the senior partner in some things; but there is one thing, in particular, in which Australia has set an excellent and worthy example, not only to England, but to the whole civilised world. This is the manner in which she is dealing with the question of caring for those gallant soldiers of hers who fought for, and looking after the well-being of the families of those who died for the empire. While the members of other Governments consider their duty

* For example, the abolition of public executions.

limited to making speeches for the ex-Service man, calling him a "hero," and making promises to him which have not been, and are never likely to be, fulfilled, the Australian Government have tackled the question like honest, sympathetic, and at the same time thoroughly practical men. They have taken the ex-Service man by the hand, saying, "What can we do for you? Do you want land? Do you want to learn a trade, or have a University Education? Would you prefer Technical Education, or Agricultural Instruction? You shall have it: we shall see to that. You were married abroad? We shall bring your dependents to Australia free of charge. You want to buy furniture? Here is a loan of £50. You want to buy tools for your trade: we shall lend you £10. You wish to enter a business: we can assist you up to £250; and while you are waiting for the produce of your land or business we shall give you £3 a week." The settlement of this Imperial question was not placed in the hands of a group of influential political jobbers, but under the control and direction of real soldiers, who had well earned their rank and honours on the field of battle, not in luxurious office chairs. If ever men are wanted to defend Australia, they will be found in the families and descendants of those who so nobly fought for the empire in the Great War.

New Zealand

New Zealand consists of two large islands and a very small one; the total area of which is about 105,000 square miles, or five-sixths that of the United Kingdom. The population is 1,000,000, of which about 5 per cent. are Maori. It was first colonised by England in 1839; a constitution was granted to it in 1852; we fought against and conquered the Maoris in 1864; and one of the results of this was the change of the capital, from Auckland in the north, to Wellington in the south of the North Island, in 1865.

New Zealand in many parts is very mountainous; a mountain chain traverses the west side of South Island, culminating in Mt. Cook, 12,400 feet in height. The geographical position and physical features of the country tend to render the climate very varied; still it is somewhat similar to that of Great Britain, though the atmosphere is drier and more elastic. The mean annual temperature of London is 7° colder than North

Island, and 4° colder than South Island. Every fruit, flower and vegetable that grows in Great Britain can be successfully cultivated in New Zealand. The most peculiar product of New Zealand is the Kauri pine, much valued for shipbuilding, from its lightness and elasticity; the resin of this tree forming also one of its most valuable exports, Kauri gum, which makes the best varnish. Considerable quantities of New Zealand flax are also sent to the United Kingdom for the manufacture of ropes. Wool, tallow and timber are the principal exports of the islands.

The most important towns are: Auckland (54,000), Napier (9,000) and Wellington (36,000), in North Island, all connected by rail; Christchurch (50,000), Dunedin (49,000), and Nelson (10,000), in South Island.

The following figures give the principal products and the annual exports: grain, 1,200,000 bushels; wool, 160,000,000 lbs.; frozen meat, 240,000,000 lbs.; flax, 28,000 tons; gold, 500,000 ozs.; Kauri gum, 10,000 tons; butter, 320,000 cwts.; and cheese, 160,000 cwts.

New Zealand gets boots and shoes, kerosene oil and tobacco, from the United States; nearly all her other imports come from England. Since the opening of the Panama Canal her imports from America have considerably increased; and the English manufacturers who, up to the time of the war, did large business with New Zealand, find that this is now slipping out of their hands. In 1913, the value of the iron and steel imported from England was £1,000,000, and of the cotton goods £500,000. Then came a time when England wanted for herself all the steel and iron she could get hold of, and so New Zealand had to turn to America. The Panama Canal brought New York 4,000 miles nearer than it was before; and the very unsettled state of labour and machinery in England after the war tempted New Zealand to do her business in a quarter where deliveries were reliable. So now large quantities of hardware, hosiery and apparel come from the United States' markets to the quays of Auckland and Wellington. Thus the breaking-down of the Panama barrier between the two great oceans indirectly assisted to raise a commercial barrier between New Zealand and England.

British North America

Canada is nearly as large as Europe, covering an area of 3,700,000 miles; and its population, before the Great War, was

about 7,500,000. If the area of our Dominion of South Africa be added to that of Australia, it will give us the area of Canada. It is very nearly twice the size of British India, thirty times larger than the United Kingdom, and the whole of Scotland would fit into one of its lakes (Superior) without touching the shores. It stretches across from the Atlantic to the Pacific; and from the fiftieth parallel of north latitude right away into the Arctic regions.

If, on the map of Canada, a line be drawn south-east from the mouth of the Mackenzie River to Winnipeg, it will divide Canada into two parts; the western part gradually rising to high plateaux and mountains, which, on their western side, drop suddenly into the Pacific; the eastern portion consisting of lowland, which rises nowhere higher than 5,000 feet above the sea level.

Canada is composed of the Provinces of Ontario, Quebec, New Brunswick, Nova Scotia, Manitoba, British Columbia, Alberta, Saskatchewan, North-West Territories, Prince Edward Island and Yukon. Each of these Provinces has a Lieutenant-Governor, appointed by the Governor-General, and a single-chamber Legislative Assembly (except Quebec and Nova Scotia, which have, in addition, a Legislative Council). The Central Government (at Ottawa) has two houses: a Senate, nominated for life by the Governor-General; and a House of Commons, on the English model. This system of Government in Canada is the best and most successful example of what we mean when we speak of *Dominion Government*.

The boundary between Canada and the United States is marked by a line drawn through Juan de Fuca Strait, south of Vancouver Island, striking the mainland a few miles south of New Westminster, at the little railway station of Blaine. Going east, along the forty-ninth parallel of north latitude, it passes south of Fort Shepherd, crosses the Kootenay River, and over the Rocky Mountains by the South Kootenay Pass. (Fort Shepherd marks the nearest point on the Canadian Pacific Railway to the United States frontier.) Now it passes just south of Coutts, a frontier and railway station; then over a wild and bleak stretch, till it crosses the Red River at Emerson railway station. Here there are two railways, one on each side of the Red River, leading from the United States into Canada. Eighty miles east of this it meets the Lake of the Woods, at the

longitude of 95° W. It then runs to the south-east; and the Pigeon River marks where it strikes the shores of Lake Superior. It then runs south-east again through this lake, and south through Lakes Huron and St. Clair. When it comes to the east of Detroit it begins to swing round to the north-east; and passing through the middle of Lakes Erie and Ontario, it follows the north bank of the St. Lawrence on to 45° N., 70 miles from Montreal. It follows the 45° parallel till it comes to the little railway station of Hereford, on the borders of New Hampshire (U.S.), then along north-east, by the "Height of Land," to the meridian of 69° W., where it bends round, east and south, till it enters the Atlantic at Passamaquoddy Bay in New Brunswick; the river St. Croix forming a natural boundary for the last 40 miles.

Now this is a very long line; and, in parts, a very weak line, to form a boundary between a population of 105,000,000 on the south of it against 8,000,000 on the north. It behoves the north to live on good terms with the south. But if the worst should happen, there is still no cause why Canada should despair. Before her sons were "blooded" in the Great War, she had more than once defeated invasion from the south; and there is no reason why she should not do so again. But she will have to concentrate her forces behind her strongest line of defence; and she must make up her mind to sacrifice, at least for some time, the whole of her territory between Lake Superior and Vancouver. The most important and richest parts of the United States stand just outside her front door, on the east. And even if she were to lose New Brunswick, she would still have Nova Scotia, to turn into a second Torres Vedras, as Wellington did against the conquering French in the Peninsula (1810).*

From time to time disputes have arisen between Canada and the United States on the question of Frontiers. But, to the honour of humanity, and to the credit of the wisdom and good sense of those who took part in them, they have been settled by arbitration. One of them was particularly remarkable, and very interesting from a geographical point of view; as showing how *frontiers can be changed by natural causes*. When man-made law comes into conflict with the laws of Nature, no great prescience is needed to foretell the result. The "Alaskan Boundary Agreement," between England and the United States,

* "There are many sorts of frontiers and of boundaries; but those which have through all ages proved most effective are undoubtedly those which are best secured by strong natural geographical features."—SIR T. HOLDICH.

was carefully designed to exclude Canada from access to the Pacific, through Alaska. The boundary was drawn at a distance of about 35 miles from the head of Glacé Bay, so that even the top of Reid Inlet, where the "Grand Pacific Glacier" ended, was 4 miles from Canadian territory. And here is where the American treaty-makers left Physical Geography entirely out of their reckoning: they looked upon the glacier as a permanent landmark. They did this in 1903; and in 1913 the glacier had retreated so that it is now on the Canadian side. And thus it has happened that Nature has given to Canada a new Pacific harbour, in defiance of the treaty rights of the United States.

But this acquisition is more curious than valuable; because as surely as the glacier has retreated, so surely will it return, in course of time, across the boundary.

The Lake Region consists of broad, shallow depressions containing the lakes, with bleak uplands between the lakes and Hudson's Bay. This ridge of upland forms the watershed between the St. Lawrence basin and the rivers flowing to the north.

In mid-winter, the whole of Canada, with the exception of Vancouver and part of British Columbia, has a temperature below freezing-point. The coldest part is to the north-west of Hudson Bay and the warmest part British Columbia, where the mean annual temperature (50°) is the same as that in the south of England. The heaviest rainfall (40 inches annually) is in the Eastern Provinces, especially Nova Scotia; and along the coast of British Columbia. The annual rainfall in the region between Lake Superior and British Columbia is never more than 20 inches.

Crossing Canada from the Pacific to the Atlantic we pass through three distinct and different regions: the forest and mineral area, west of the Rocky Mountains; the prairie region, east of this range as far as the longitude of Lake of the Woods; then the wood and grass lands, to the Atlantic. A large part of Canada is devoted to farming; wheat is grown in Manitoba, Saskatchewan and Ontario. Oats are grown in all the Provinces, and barley in Manitoba and Ontario. Saskatchewan produces far more wheat and oats, but less barley, than Manitoba. And Manitoba produces less than half the quantity of oats, but nearly three times the quantity of wheat grown in Ontario. But what the Eastern States lose in grain they make up for in live stock and minerals. Ontario and Quebec have more cattle

and sheep than all the other Provinces put together : Quebec produces sixteen times the quantity of butter produced in Manitoba ; and the quantity of cheese produced in Ontario is fifty times greater than that of all the rest of the Dominion. For every ton of iron ore turned out in British Columbia, 36 tons are produced in Ontario, Nova Scotia and Quebec ; and the coal from Nova Scotia is four times that from British Columbia.

One of the very few benefits of the Great War is the increase of our knowledge of geography. Ten years ago—and even, perhaps, to-day—if the normal man or boy were asked in what part of the world a city called Sydney is situated, he would have thought only of the capital of New South Wales ; our gallant Australian brothers, soldiers and sailors, would probably have sworn that there is a one and only Sydney, the location of the *Bulletin* and the capital of the Universe. But there is another Sydney in the Great Dominion of the West ; on the north-east coast of Cape Breton Island, where the cables converge from Newfoundland and Europe. And *this* Sydney was the chief coaling station for the Allied warships and convoys to and from Canada during the war.

The only meat exports of Canada are bacon and live cattle, which are sent to the United Kingdom ; 70 per cent. coming from Ontario and Quebec, while 20 per cent. come from Alberta and Saskatchewan. Nearly 80 per cent. of the Canadian wheat is sent to England ; which is more than double that sent by Australia, but only about two-thirds of what is sent to England from India. It is worth noting that the supply of *meat* from Canada has been lately exceeded by that from New Zealand ; and that Canada can never be such a suitable country for sheep as New Zealand or Australia. Not only does Canada supply grain, butter and cheese, to England and Newfoundland ; she also supplies butter, cheese, and fish to all the British West India Islands and to British Guiana. She does no trade with British Honduras, in Central America, as the United States port of New Orleans is more convenient for this colony. The coloured population of our West Indies are not enterprising enough to catch their own fish, or to make butter and cheese for themselves. Canada gets all her maize, tobacco, petroleum and raw cotton from the United States ; and sends, in return, flour and oatmeal to New York ; and, to the United States generally, 80 per cent. of her wool export, 90 per cent. of her herrings, 95 per cent. of her copper, and all her iron ore. The principal

mines for copper and nickel are in Sudbury, Ontario; iron, in the district north of Lake Ontario and east of Lake Huron; and petroleum in Lambton County, Ontario. During the last few years some very large oil-fields have been discovered in the far north: and Fort Norman is the most northerly place in the world where petrol is being produced; but until easier lines of communication have been made with these fields, their value as oil-producing property is not exactly known.* Gold is found at Klondyke, in Yukon, and in British Columbia, at Kootenay and Nanaimo. Silver is found in the Cobalt district, in Ontario, and also in British Columbia.

The towns in Canada with a population of 20,000 and more are: Montreal (450,000); Toronto (325,000); Winnipeg (125,000); Vancouver (85,000); Ottawa (83,000); Quebec (75,000); Hamilton (70,000); Halifax (50,000); St. John, New Brunswick (50,000); London (50,000); Calgary (42,000); Victoria (40,000); Edmonton (30,000); Kingston (25,000); Brantford (20,000).

Although Canada has no cities so large as the Australian cities of Sydney and Melbourne, still she has many more towns with a population of between 5,000 and 20,000 than Australia has; and this is one of the main reasons why Canada is progressing much faster than Australia, both in wealth and civilisation. While the Australian rushes periodically into the nearest large city to spend his earnings in dissipation and drink, the Canadian sends his money by post to his bank, and keeps on working, sane in body and mind.

The Canadian Government controls 23,000 miles of railway.† In the year 1910, the total annual payment in salaries and wages to the railway employees was £13,000,000; in 1920 it was £51,000,000. In 1910, the ratio of salaries and wages to gross earnings was 38 per cent., and in 1920, 60 per cent. Compared with the pre-war scale, the average wage of railway employees in Canada has increased from £150 to £400 a year. The

* "In the Mackenzie Basin has been discovered evidence of one of the largest oil-bearing countries in the world. The rocks supposed to be the source of this oil cover an area of at least 300,000 square miles. It is hardly possible to exaggerate the importance of this deposit, the exploitation of which cannot be long deferred; for the oil reserves of the United States are estimated by the United States Geological Survey to be sufficient, at the present rate of output, for only about thirty years; and no part of the North American Continent gives such promise of new oil-fields as the basin of the Mackenzie River."—*British Dominions Year Book*, 1921.

† Altogether, in Canada, there are 52,000 miles of railway (1921).

Minister of Railways has publicly stated that every five shillings' worth of business done by the railways costs the Canadian taxpayer seven shillings. This is a valuable lesson in the question of nationalisation of railways ; and it shows why, in 1920, there was a deficit of £20,000,000 on the Canadian National Railways.

There are four important railways in Canada : the Canadian Pacific, the Grand Trunk Pacific, the Grand Trunk and the Canadian Northern.

The motive which primarily dictated the building of the Canadian Pacific—the first trans-continental railway in Canada—was both strategic and political. Those who had begun to "think Imperially" saw a new and convenient route to the Pacific and the Far East. British Columbia, in the far west, had become a Province of the Dominion only on the expressed understanding that railway connection should be established with Eastern Canada ; just as, in later years, West Australia entered the federation of the Commonwealth on a similar understanding. The geographical relationship of Western Canada, especially the longitudinal mountain zone, is rather with American territory to the south than with the Eastern British Provinces, from which British Columbia was even more isolated than West Australia from New South Wales, since no direct sea passage connects them.

The negotiations which preceded the building of the Canadian Pacific Railway form an important part in Canadian political history ; they were a leading question at a general election in 1872 ; and the line was not completed until 1885. But apart from all considerations which concerned party politics, the difficulties both of financing and of constructing the line were very great. On its course from Quebec and Montreal, by way of Ottawa, Fort William, Winnipeg, Regina and Calgary, to Vancouver, the line encountered heavy obstacles to construction ; not only in the passage through the Rockies, Selkirks, and other mountains of British Columbia, but also in a minor though less serious degree along the shores of Lake Superior, and elsewhere. After this the Grand Trunk Railway was started, from Moncton in New Brunswick, the junction for lines from the two ports of Halifax and St. John ; went on by Blue River to Quebec on the further side of the St. Lawrence ; thence by a northern route through Cochrane, Hearst, Armstrong and Graham, to Winnipeg. The Grand Trunk Pacific carries the line forward, by way of Edmonton and an easier

route through the mountains than that of the Canadian Pacific, to the northern Pacific port of Prince Rupert. The Canadian Northern, with a line from Toronto to Sudbury, Port Arthur and Winnipeg—a city which collects all the lines, thanks to its geographical position between Lake Winnipeg and the southern frontier—proceeds to Edmonton; thence enters the mountains alongside the Grand Trunk Pacific, but diverges south to Vancouver. A branch of this railway is to run from Le Pas north-east to Fort Churchill, on Hudson Bay. Now, strange as it may appear to one who is only looking at a flat map, it will be seen from a globe that Fort Churchill is a little nearer to Glasgow than Montreal is; and to get by rail from Fort Churchill to Prince Rupert, the Pacific port, should take only one-third of the time required for the trans-continental journey between Quebec and New Westminster, or Vancouver.* So that for five months of the year, April to September, it should take only 21 days to get, by this route, to Shanghai, which is 32 days' journey by the London-Brindisi-Suez route. (In the answers to the *Examination Papers*, later on, more information is given about Canada and the Canadian Railways.)

In addition to the railway traffic there is the river and lake traffic. From Lake Superior to Lake Huron there are the Sault Ste. Marie (now commonly called the "Soo") canals; to avoid the Niagara Falls there is the Welland Canal. The Canadian seaport on Lake Superior is Port Arthur; the United States seaport is Duluth. From these two ports, specially constructed steamers have brought large cargoes of wheat to Liverpool.

Newfoundland.—The area of this island is 43,000 square miles, and its population about 250,000. Politically, Newfoundland includes Labrador, with an area of 120,000 square miles and a population of about 5,000.

Newfoundland is separated from the mainland by the Strait of Belleisle, and from Cape Breton Island by Cabot Strait. Its shores are rocky, dangerous and much indented. Its surface is undulating, with pine forests and barren patches, varied by fertile valleys with numerous rivers and lakes. The cold Labrador Current, running down from the Arctic Ocean, meets the warm waters of the Gulf Stream, on the south-east of the island, and causes dense fogs to prevail for the greater part of

* Liverpool—Fort Churchill—Vancouver, 4,500 miles; Liverpool—Montreal—Vancouver, 5,900 miles. But the former is open only for five months in the year.

the year. The Grand Banks of Newfoundland are noted for their extensive fisheries. Here the harvest of the sea is so plentiful that fishing fleets are attracted even from Western Europe. Newfoundland exports fish to Great Britain, Portugal, Spain, Italy, Brazil and the British West Indies.

It has been stated on excellent authority * that Newfoundland is likely to furnish much of the iron ore to be smelted into steel for future warships and their armaments. On Bell Island, at Conception Bay, on the east coast, 12 miles from St. John's, is one of the largest hematite iron ore deposits in the world. There are also large areas containing oil-bearing shales of much promise, from which some very good oil has been already obtained. Should the oil prove to be in sufficient quantity, this would allow of British warships fuelling themselves in this section of the North Atlantic all the year round, and would also furnish the liners plying over the Canadian route between Montreal and the British Isles with a means of renewing their oil supplies every trip with a minimum of deviation and delay.

Newfoundland is nearer to Europe than any other part of America. From the south-west corner of Ireland to St. John's is only 1,700 miles. This is why the Atlantic cables are laid along from Valentia, in Kerry, to Trinity Bay, in the east of Newfoundland. As aviation progresses, and long flights can be undertaken with less danger than at present, and in machines better able to cope with atmospheric conditions than those now in use, it is very probable that flights will be quite common, after a few years, between Newfoundland and Ireland, and that its capital, St. John's, will be one of the great aviation stations in the world.

South Africa

"We must not allow British South Africa and the English possessions in the north-east of Africa to obtain communications with each other. The achievement of the English ideal of a through line from the Cape to Cairo would enable England at any time to roll up the foreign Colonies lying to the left and the right of this railway, while the English fleet would at the same time attack from the sea."

This is an exact translation of the words of a German statesman who was formerly director of the largest and most important German Colonial Company. It is a précis of

* The Times : Imperial Supplement.

the Military Geography of the British possessions in Africa ; and it is proof of the importance of the Cape-to-Cairo line as one of the greatest civilising, economic and political forces in the world. Historical events have already cancelled in a most unmistakable manner the ostentatious dictum, " we must not allow " ; and a study of the Military Geography of South Africa will show the probable trend of future history in this part of the world.

It was during the wars following on the French Revolution that we first gained a footing in South Africa. We took Cape Colony from the Dutch, who were allies of France. And although, in 1815, some of our statesmen were disposed to return it to the Dutch, yet its importance as a stepping-stone between England and India outweighed our liberality ; so we kept it. Politically we were right, morally we were wrong. It is related that Prince Gortchakoff, at the Berlin Congress, reminded Lord Beaconsfield that the English had robbed small nations, especially the Dutch. The English statesman, who, by the Treaty, had taken Cyprus from Turkey, replied by saying that Russia had been continually robbing the Ottoman Empire for more than a century. Upon which Gortchakoff, who was a great admirer and student of Shakespeare's plays, retorted in the words of *Antient Pistol* : " Didst thou not share ? hadst thou not fifteen pence ? "

It has been sometimes said that Africa is the grave of reputation. The reason for this is that some men, especially military men, who had worked up for themselves, by various means, a bubble reputation, before they went to Africa, lost it when they were put to the test. Hicks and Colley had the reputation of being in their time the ablest soldiers in the old Indian Staff Corps. But the men of real, solid ability have rather increased than lost their reputation in Africa. There is much truth in what has been said by those writers whose standard of greatness in men is different from that of others ; namely, that David Livingstone was a greater man than Napoleon Bonaparte, and Gordon a greater hero than Bolivar. There never was and never will be any doubts about the reputation of such men as Rhodes, Kitchener, Milner, Wolseley, Frere and Sir William Butler.

The **Union of South Africa** consists of four Provinces : Cape of Good Hope, Natal, Transvaal and the Orange Free

State. Area, 473,000 square miles ; population, 6,000,000. A line drawn from Cape Agulhas, 35° S. latitude, and 20° E. longitude, north-eastwards to the Limpopo river, which marks the northern boundary of the Transvaal, will be 1,100 miles long. Another line from the mouth of the Orange river, eastwards to Durban, the port of Natal, will measure 900 miles.

In the Cape Colony and Natal, the surface of the land rises from the seashore in terraces, to the first plateau, which is about 3,000 feet high, and then to a second plateau with a height of about 5,000 feet. Going north-west from Durban the rise is more abrupt, till it culminates in the Drakenberg Range with peaks about 9,000 feet high. This ridge on the east is remarkably similar to the "Great Divide" in the south-east of Australia ; and it separates the basins of the few short rivers which flow into the Indian Ocean from the longer rivers which join to form the Orange River and send their waters to the Atlantic Ocean. The valley of the Orange is like that of the Murray ; and its most important tributary, the Vaal, corresponds to the Darling. But while the greater part of the Murray-Darling valley is only 500 feet above the sea level, the average altitude of the Orange-Vaal district is 3,000 feet.

The trade-winds blow *towards* the land on the eastern coast, but *away from* it on the west. The plains of the interior become more heated, in summer, than the ocean, thus causing winds from the sea inwards. These add to the strength of the eastern trade-winds, which, heavily laden with moisture from the Indian Ocean, strike against the east coast range of mountains and become condensed ; so that while the annual rainfall at Pietermaritzburg is 34 inches it is never more than 15 inches at Bloemfontein. On the west the winds from the sea are met by those from the land, and lose much of their force ; and, blowing from a cooler to a warmer atmosphere, they retain most of their moisture. The rainfall on the eastern side is from September to April, increasing in volume towards the north, and diminishing towards the west. On the Great Karroo, the annual rainfall is 9 inches, while the district round the mouth of the Orange River is almost rainless. Winter rains fall in the Cape Colony, in the neighbourhood of Cape Town, making the annual rainfall here in some years as high as 25, but never less than 10 inches.

Cape Town is very nearly half-way between Liverpool and Adelaide (6,000 miles) ; it is 6,800 miles from New York ; and

its distance from Bombay, *via* Mauritius, is 6,400 miles. Buenos Ayres, now the largest seaport in South America, is about 3,500 miles direct west from Cape Town ; a distance very nearly equal to the greatest length as well as the greatest breadth of the African Continent.

Although British South Africa has been up to the present a miner's country, still it is by nature a farmer's country. With more care and special attention to local conditions, it might at least attain to the level of New Zealand as a farming land, but at present the country gives work far more attractive and profitable than farming : mining for diamonds and gold. The best farming is done in the Cape Colony and Natal. The Cape farms supply oats to the United Kingdom, India, Mauritius, Australia, and to the other South African States ; her annual exports of this grain amounting to 36,000,000 lbs. Natal and the Transvaal export large quantities of maize to the United Kingdom, Belgium, and all over South Africa. Meat is imported from Argentina and Australia ; only in the case of Natal, and then only in the matter of mutton, is there any export of home-grown meat from South Africa. The coast colonies act as entrepôts for the supply of meat to neighbouring parts of Africa : to Mauritius, Portuguese East Africa, and to what was German West Africa. Up to the present the South African farmer has never thought about meat export, though the grass lands in the Cape Colony should be favourable to this enterprise. New Zealand produces about twice as much wool as South Africa ; and although the soil of Natal is particularly favourable for the growth of tea, she has never been able to manufacture more than 2,000,000 pounds annually. This province also supplies coal to India, Ceylon, Mauritius and the Straits Settlements ; but out of 6,000,000 tons produced annually only 2,000,000 are exported. Portuguese East Africa gets its coal from the mines in the Transvaal. In proportion to its population, South Africa is England's best customer for apparel, cotton and woollen goods ; and is also a very good customer to Australia, the United States and Canada, for wheat and flour. But she gets all her cheese from Holland, and her butter from Argentina. There is also a trade in ostrich feathers between the Cape and the United Kingdom, which amounts to a little over £1,000,000 annually.

The wealth of South Africa at present consists in its mines. At Kimberley and about Pretoria are the diamond mines which

supply the world. At Johannesburg and in the Transvaal are the gold mines. The Transvaal produces 30 per cent. of the world's gold ; and at Ookiep, in the west of Cape Colony, there are productive copper mines. In Rhodesia many mineral deposits have been found which are proving to be very productive, notably near Broken Hill, where zinc and lead are mined. When this mining industry fails, as it is certain to do in the long run, South Africa will come into its own again ; and when the resources of science and civilisation have swept away the noxious insects and other drawbacks, in the north, there will be nothing to prevent the Union from becoming a land of grain, of flocks and herds, and of horses and cattle.

The Colour Question in South Africa is not yet so serious as that in the United States of America ; but it would be far worse than it is at present if white men in South Africa had gone to the trouble and expense of educating and endowing schools, colleges and universities for the black men. The Boers have been perfectly right in keeping the Black Man in his own place. They may have, on occasion, overstepped the mark and treated him as their slave. But in this they were only following the example of England who, for one hundred and fifty years, had a monopoly of the old Slave Trade, and who signed the Treaty of Utrecht (1713) only on the condition that this monopoly should continue. They have also had the worthy example of estimable and dignified bodies, such as the Society for the Propagation of the Gospel, which owned and worked slave plantations in Jamaica when slavery meant far more than it has ever meant in South Africa.* The much-maligned Boer has not been in this respect one whit worse than others ; but there is every reason to believe and hope that he is now about to deal with the Colour Question in a satisfactory and broad-minded manner.

The best solution would seem to be somewhat on the following lines : (i) A definite frontier of territorial separation between white and black ; (ii) the provision of opportunity and scope for natural development, in segregated areas, with the right of representation by delegates ; (iii) the realisation that it is the

* *History of European Colonies* (p. 200). By Edward J. Payne, M.A., Fellow of University College, Oxford. Macmillan and Co., London ; 1877. " In Jamaica, negroes were burnt alive by inches at a slow fire, and the gentlest punishment was to hang them alive in chains and leave them to die of hunger " (*ibid.* p. 74).

rôle of White Civilisation not so much to thrust itself upon an unprepared native mentality as to guide and help its development.

Still, in spite of all this, if Mohammedan proselytizers gain as much success on the south of the Zambesi as they have already achieved north of this river, then the South African dominion would be wise in preparing to meet trouble.

There are three **Railway Systems** in South Africa: The *Western*, which starts from Cape Town, running generally east and north-east, through Worcester, Beaufort, De Aar, Kimberley, Vryburg, Mafeking, Bulawayo; here turning north-west and crossing the Zambesi river at the Victoria Falls; then north, to Bukama, on the Congo river. The *Midland* starts from Port Elizabeth, and joins the Western system at De Aar. From Rosmead junction a branch runs north-east, through Bloemfontein and Kronstad to Pretoria. The *Eastern* starts from East London, and connects with this latter branch at Springfontein junction. From Durban a line runs through Pietermaritzburg, Ladysmith, Wakkerstroom and Standerton to Johannesburg. From Lorenzo Marques, on Delagoa Bay, a line runs inland, crossing the Transvaal border at Koomati Poort, and going on to Pretoria. This line enjoyed its greatest flush of prosperity during the South African War (1899-1902), and subjected the alleged "neutrality" of our old friends, the Portuguese, to a very severe strain. From Beira, again on the east coast, a line connects with Bulawayo. South of the Orange River, on the Western line, a branch railway now runs north-west, to join the pre-war railway made here by Germany, and on to Walfisch Bay. There is also a short line from Port Nolloth to the copper mines at Springbok. (In the *Answers to the Examination Papers*, more information will be found about the railways in South Africa.)

It will be some years before the traveller can get into his carriage at Cairo and get out at Cape Town. More than two-thirds of the Cape-to-Cairo line is built. But a combined rail-and-waterway is wanting only in a comparatively short link. From Cape Town, the navigable upper waters of the Congo may now be reached at Bukama by railway. The river is navigated to Congola, where rapids and a flanking railway intervene to Kindu; similarly, a water-stage to Ponthierville is followed by a rail-stage to Stanleyville. At this

point comes the break in the connection, where a railway from Stanleyville to Lake Albert is only authorised as yet. The Nile waterway would be reached here ; but a railway avoiding rapids would be necessary between Dufile and Rejaf. From Rejaf the river may be followed down for hundreds of miles until it strikes the Sudan Railway west of Sennar ; thence there is communication by train with Wady Halfa, by river to Shellal, and by train again to Cairo and the ports of the Egyptian delta.

The main advantages of the Cape-to-Cairo line are obvious : it would serve strategic, economic and political objects similar throughout, but differing locally in successive stages, in connection with junctions for lines east or west, to the seaports on the Indian Ocean or on the Atlantic. It is already connected with Port Sudan and Suakin on the Red Sea ; and it has been shown how it is connected with Beira, Lorenzo Marques, Durban and East London, on the Indian Ocean, and with Walfisch Bay, on the Atlantic. But there are still more developments of this Great Railway artery which will be probably carried out in the near future. In April 1914, a railway line, 780 miles long, was completed between the seaport of Dar-es-Salaam on the Indian Ocean and the port of Kigoma on Lake Tanganyika. A line connecting Kigoma, round the head of Lake Tanganyika, with Kindu, on the main railway artery, would be more important than any other of its branches. It has taken only two days by this railway to get from Dar-es-Salaam to Kigoma ; and the distance to Kindu from the head of Lake Tanganyika is only 240 miles. Another railway, the progress of which was interrupted by the war, is the line from the Atlantic seaport of Benguela, in Portuguese territory, which is intended to tap the resources of the rich copper district of Katanga, and join the main line near Victoria Falls. A line has also been begun from St. Paul de Loanda, going east, which may ultimately join the Cape-to-Cairo route at Bukama. And it is not improbable that the French railway, which starts from Jibutil (opposite Aden), and has already reached Adis Ababa, may be continued down by the valley of the Blue Nile to Sennar.

The very last time that the able and brilliant author of the *Life of Stonewall Jackson* * put his pen to paper was to write

* Colonel G. F. Henderson. He corrected the proofs of his article at Assouan, on the Nile, only a few days before his death, in March 1903.

on the strategy of the Boer War and the Military Geography of South Africa. The whole article will repay careful reading, and the following paragraph is particularly worth quoting :—

“ A distinction must always be made between that part of the British army whose function it is to support the navy and that part which is charged with the defence of our outlying provinces. Had this been done before 1899, the borders of Cape Colony and Natal would have been so strongly held that even Kruger would have shrunk from the task of forcing them. Long before the Jamieson Raid the South African garrison should have been increased to 30,000 or 40,000 men ; and why the home authorities should have been reluctant to decrease the force at home by those numbers is inconceivable. *South Africa, in almost every respect, was a most eligible quarter, admirably adapted for the training of the troops, admirably situated as a strategic centre, whence the navy might be supported or India reinforced in the Southern Seas.*”

(As the last sentence in the essay from which this quotation has been taken is very characteristic of the author, it may be of interest to give it here. He says : “ The army of Great Britain is practically commanded by the nation, through its parliamentary representatives. Is it not the business of the nation to see that these representatives have some knowledge of the work with which they are entrusted ? ”)

That railways in war are good servants but bad masters was proved in South Africa, as well as in the Manchurian War. The British forces were compelled to cling to the railways ; therefore the Boer leaders knew beforehand where the points of concentration would probably be, and also the direction of the lines of operations. Belmont, Modder River, and Magersfontein are on the railway to Kimberley ; Colenso, Spion Kop, Ladysmith and Elands-laagte, on the line from Durban and Pietermaritzburg to Amajuba Hill.

Smaller British Possessions

Aden.—Fortified coaling-station ; 1,400 miles from Port Said, and 1,660 from Bombay.

It is more than eighty years since we took Aden from the Arabs. It became ours five years before we got Hong Kong, ten years before we annexed the Punjab, twenty years before

we owned Natal, and fifty before we took East Africa. Yet the outward and visible signs of civilisation, and the advantages of British rule, are far fewer in Aden than in our younger possessions. In pre-war days, Hong Kong was the largest seaport in the British Empire ; Durban is as civilised and flourishing as Folkestone ; Mombasa is lit by electric lamps ; while the badly-paved and filthy streets of Aden are lit at long intervals by the brown light of smoky paraffin ; the piers and landing-places of its beautiful and extensive natural harbour would be a disgrace to a third-rate fishing village on the shores of Scotland. Not only is Aden standing still, it is steadily falling back. There are a good many reasons for this ; but it is principally due to the fact that Aden is governed from India, as King Charles I. wished that Newfoundland should be ruled : by the Mayor of Southampton. Instead of being turned to advantage as a great asset in Imperial strategy, it has been simply a perquisite in the hands of the military department of the Government of India ; and the natural results are only what were to be expected. Lord Roberts saw clearly what was wrong with the status of Aden, when he was Commander-in-Chief in India. He wrote :

“ It is not creditable to British rule to make use of a dependency like Aden for selfish purposes of political necessity without attempting to extend the benefits of civilised government to the neighbouring native tribes, especially when these tribes are living under the ægis of the British Crown. The Persians, the Turks, and even the Arabs did more for Aden in their time than we have done. Aden has always suffered under the disadvantage of being an appanage of the Bombay Presidency, with which it has neither geographical nor political affinity. Probably the best solution of the matter would be to hand over the place to the Colonial Office, relieving the Government of Bombay of a charge which is only looked upon as an incubus.”

Politically attached to Aden are the islands of Perim, Sokotra and Kuria Muria. Perim is a coal depot ; there is one harbour, Kalenzia, on the Sokotra coast ; and the cable from Bombay lands at the Kuria Muria Islands. Before the war, the British Protectorate on the mainland north of Aden was about twice the size of Wales ; and it contained a good sanatorium, at Dthala, about 8,000 feet above the sea level, and 72 miles from Aden, as the crow flies. A railway from Aden to Dthala would

be about 90 miles long. Some years before the war an European firm in Aden asked for permission to build such a railway; they were ready to accept all risks and stand all expenses; the only thing they asked for was Government sanction. Before replying, the Government set about to inquire whether there was anybody who might wish to raise objections to the construction of the line. Now there were in Aden at the time a few Arabs, Jews and Parsees, who called themselves "The Aden Chamber of Commerce." These men, having first of all had a certain amount of correspondence with the Europeans who wanted to build the railway, sent up a petition, through the Aden "Resident," stating it as their opinion that the projected railway would be certain to cause the ruin of the trade of Aden; further, it would be the means of introducing into Aden a very turbulent and unruly element, in the shape of wild Bedāwi robbers and cut-throats who would make life and property unsafe in Aden itself. They also said—and in this there was a certain amount of probability—that all the civil and military officials would go and spend six months of the year at Dthala, 100 miles away; during which time Aden itself would present more of a graveyard appearance than it does generally; a condition which the normal imagination altogether fails to grasp. But they were careful not to mention that the projected railway could carry up troops from Aden to Dthala in 3 or 4 hours; that a comparatively small body of troops holding the commanding ridges at Dthala could keep back a force of 50,000 Turks, with the greatest ease. Mr. (now Lord) Morley received the petition from the "Aden Chamber of Commerce," and replied to it. He said that "His Majesty's Government has never desired to interfere with the internal and domestic affairs of the Arab tribes," which, by the way, nobody had ever asked His Majesty's Government to do, and which had not the remotest connection with the Aden-Dthala Railway question. He gave his influential support to the expressed views of the "Aden Chamber of Commerce"; and the indirect result of his policy proved to be something to be covered over and forgotten in British Military History.* One characteristic example of the financial policy of the Indian Government with regard to Aden

* The author has seen, in Aden, the original draft of the petition which was sent to Lord Morley, and has been shown Lord Morley's reply thereto. With regard to the projected railway, he has got his information, at first hand, from the members of the European firm and the Chamber of Commerce.

is worth recording. Shortly before the war, the head of the Military Works Department in Aden (a colonel of the Royal Engineers) sent up an estimate to Simla for the enlargement and repair of the ancient tanks at the "Crater." Some *babu*, who knew absolutely nothing about Aden or its requirements, cut down the amount which the Royal Engineer officer had asked for, and granted him only one-quarter of the sum. The engineer spent this money on the tanks, as far as it would go. Just when he had completed his work, something happened in Aden, the like of which had not taken place for 30 years. Three inches of rain fell at the "Crater," where the total annual rainfall rarely exceeds 1 inch. This downfall gave to the treasury of Aden a clear profit of 60,000 rupees from the sale of the tank water.* Now if the Military Works Department had only got the amount they had asked for, the profits would have been 200,000 rupees. The frugal Simla *babu* had certainly saved 4,000 rupees, for a time; but in the long run he caused the loss of over 140,000 rupees.

The area of Aden is between 75 and 80 square miles; the combined areas of Kuria-Muria and Socotra, 1,400 square miles; and the population is about 50,000.

Africa.

Basutoland (area 11,700 square miles, population 500,000), and **Bechuanaland** (area 270,000 square miles, population 130,000), are Protectorates under the South African High Commission; the tribal Chiefs having certain jurisdiction between the natives. Their chief occupations are agricultural and pastoral. In Bechuanaland there are about 400,000 sheep and goats, and 300,000 horned cattle. Basutoland, which exports grain, cattle, wool and horses, lies between the Orange River Free State and Natal; Bechuanaland lies between the Transvaal and what was German South-West Africa.

British East Africa is a Protectorate, which includes Zanzibar and the Pemba Islands. With what was formerly German East Africa, it is now generally called the Kenya Colony. But, by mandate from the League of Nations, Great Britain holds German East Africa, shared with Belgium. The area of German East Africa was 384,000 square miles, and its population not less than 11,000,000.

* Distilled sea water in Aden is sold at the rate of 5 rupees for 100 gallons; but the tank water is something cheaper.

In the last few years Kenya Colony has acquired a certain amount of notoriety, on account of the failure of the much-vaunted and widely-advertised land-settlement scheme, by which the unfortunate demobilised officer and the ex-soldier, who had managed to scrape together a few hundred pounds, have been in many cases brought down to absolute ruin and beggary. In this there is no doubt that the Government was to blame, for the shameless profiteering to which the newly-arrived settler was subjected, and in which the Government itself was an active participator. The cost of the allotted farms was exorbitant; and in many cases out of all proportion to the value of the adjoining, privately-held land. The misleading estimates, for which the authorities are responsible, of the qualifying capital required from each intending settler, was nothing more nor less than obtaining money under false pretences.

But there is something still worse. It is generally believed, and openly stated, by many of those who have lost their all in the scheme, that the authorities from the very beginning never intended that the scheme should be a success;* but that the money brought into the country should be used as a bait to attract the Indian, Goanese and Parsee *banya* (shop-keeper, small trader), who would prove much more docile, much easier to keep in order, and much less likely to stand up for their rights and privileges than the men who had fought for the empire.

Be this as it may, there is not the slightest doubt that one of the first articles in the political creed of New India is "East Africa for the Indians." They make no secret of it. In December 1920, the president of the Indian East African Congress, held at Mombasa, openly declared that the time had arrived to demand that Kenya should be taken over by the Government of India, whilst advocating meanwhile the non-payment of taxes, and passive resistance to British rule. While the attitude of the Administration towards the British representatives of the commercial houses already established in Dar-es-Salaam may be described as one of qualified toleration, the positive indulgence shown by it towards the Indian Community furnishes a striking contrast. In the very near future the whole of the retail trade of Tanganyika will be in Indian

* The author is in possession of large correspondence in which this is freely stated, over and over again, with reasons given.

hands. An institution exists for the purpose of guaranteeing the *bona fides* of any Indian who wishes to enter the territory; and there are no other restrictions. Yet, some months ago, no white man was allowed to remain in the country without undergoing the most vexatious official investigation; and then only under police supervision, like a ticket-of-leave convict. No British firm in the territory can hope to succeed without employing Indian brokers and agents, or without the tacit permission of Indian firms similarly engaged. The Secretariat, Railways, Public Works Department, Post and Telegraph Offices, are manned by Goanese and half-breeds, who, in the higher positions, draw as much as £30 a month; while demobilised officers in England crowd by hundreds after a situation of which the advertised pay offered is £2 a week! And it must not be forgotten that these Goanese and half-breeds are entrusted with cables, secret codes and official documents, which are supposed to be "strictly confidential," and on which events of great moment may depend. As to whether they are fully worthy of the confidence placed in them time will show; but those who know the Goanese best are the last to trust them.

If we take Mombasa as centre, and a line 2,000 miles long as radius, our circle will very nearly pass through Bombay, Port Said and Cape Town. From London to Mombasa is 6,500 miles, and the voyage takes 22 days by the "British India" steamers. The distance from Marseilles to Zanzibar is 4,700 miles, and the "Messageries Maritimes" steamers take 20 days for the voyage. A railway runs from Mombasa to Port Florence on Lake Victoria. The boundary of British East Africa, on the north, is formed by the Juba River; and Kenya is separated, on the south, from Portuguese East Africa by the Rovuma River. The coast line of the colony has a length of 800 miles.

In British Colonial history we come across examples of the truth of the saying that "the first shall be last, and the last shall be first." While some of our later colonies have risen quickly to the first place in importance, the last is occupied by some petty settlements on the West African Coast, which date from the time of Queen Elizabeth (1588). These settlements lie in four groups along the coast. Two of them, those on the Gambia River and the Gold Coast, belong to the history of the

slave trade, having formerly been the marts where negroes were purchased by English slavers. The other two, Sierra Leone and Lagos, have a better name in the history of humanity, being connected with the abolition of slavery. Sierra Leone was founded as a refuge for the rescued victims of the system; and Lagos, in 1882, was made the headquarters of the fleet which finally destroyed the slave trade.

The area of **Gambia** is 4,000 square miles, and its population 160,000. The capital is Bathurst, at the mouth of the Gambia, where the estuary of the river is 25 miles wide. A British cable goes from Lisbon, *via* Funchal (Madeira) and St. Vincent (Cape Verde Islands) to Bathurst; then south to Konakry Island and Freetown in Sierra Leone. The area of **Sierra Leone** is almost exactly the same as that of Ireland (32,000 square miles), and its population is 1,500,000. The strategical position of Freetown is most important. It is just half-way between Liverpool and Cape Town (3,000 miles from each place); it is a fortified coaling station; and a line, 1,900 miles long, drawn from it to Pernambuco (in Brazil, and also a coaling station), will mark the narrowest width of the Atlantic Ocean. Bathurst is also a coaling port; but it is not at all so important as Freetown. From June to November the climates of Gambia and Sierra Leone are deadly unhealthy for Europeans; and when the dengue fever of this unwholesome coast has once got hold of the system it is almost impossible to get rid of it. The amount of rubber exported from Gambia and Sierra Leone has considerably increased during the last ten years. Their other exports are beeswax, hides, palm oil and ground-nuts.

The **Gold Coast Colony**, with Ashanti and the Protected Northern Territories, has an area of about 60,000 square miles, and a population of nearly 2,000,000. The capital is Accra, which is 250 miles west of Lagos. The quantity of rubber exported from the Gold Coast is as great as that from all the other ports of Africa, being 36,000 cwts. annually. South Nigeria comes next with 28,000 cwts. The experiments made to grow cotton in West Africa have not been so far successful. The other exports from the Gold Coast are gold, ivory, palm oil and cocoa. The Volta River, with its tributary, the Daka, forms the greater part of the boundary between Ashanti and Togoland, on the east. It was only in 1872 that all the forts and settlements on the Gold Coast belonging to the Netherlands African Company were transferred to England. No tropical

country is so well placed geographically for production and distribution. It stands at the centre of the ocean fairway to Europe, North and South America, and the Cape, and within a few days' steaming of the world's greatest ports, with no tedious and expensive canals to pass through. Its coasts are unvexed by storms; and for centuries it has, with the help of native boatmen skilled in surfcraft, carried on its trade with ships great and small, lying off in the open roadstead. Its deep-sea harbour at Takoradi will, when completed, be one of the leading ports of the Eastern Atlantic.*

The Colony and Protectorate of **Nigeria**, including Lagos, has an area of 340,000 square miles, and a population of 17,000,000. On January 1, 1914, the whole of this colony was formed into one single Government. Later in the year an expedition was sent against the German Colony of the Kamerouns, which lay on the eastern frontier. In this campaign the Nigeria Regiment played a very important part. This regiment is maintained in a high state of efficiency. In the Kamerouns, and later, in the East African Campaign, it proved itself equal to any other corps, and better than most. Throughout the war, the chiefs and peoples of Nigeria proved thoroughly loyal to the British Government; and, although they profess the Mohammedan religion, the outbreak of war with Turkey was not sufficient to shake their confidence in the justice and ultimate success of the British cause.

There is no part of Africa with a finer future than Nigeria. At Lagos, the capital and the principal port, the great harbour works commenced fourteen years ago are nearing completion; and docks capable of accommodating the largest ships are about to be constructed. From these docks the railway runs to Kano, near the northern frontier, a distance of 705 miles; crossing the River Niger at Jebba by a magnificent bridge of over 600 yards in length. From Port Harcourt, on the estuary of the Bonny River, another railway runs into the interior, tapping the coal mines at Enugu, which are worked by natives, under European supervision. This railway is being extended northwards to the River Benue; and from here a branch will run to join the existing Lagos-Kano line. Lagos is 4,000 miles from Liverpool, and the voyage takes 26 days. The exports of Nigeria are palm oil, tin, hides, cocoa and rubber; but, up to the present, only small quantities of raw cotton.

* Mr. Nettleton, in the *Times*: Imperial Supplement.

Nyasaland is a British Protectorate on the western and southern shores of Lake Nyasa. Its area is 40,000 square miles, and its population 1,300,000. The capital is Blantyre, in what is called the "Shiré Highlands," on the south. For a long time the access to Nyasaland was very difficult. The only route, after leaving Beira, was by steam packet to Chinde, up the Zambesi and Shiré rivers; then by river-steamer to Port Herald or Chirono; and, after that, by a sort of house-boat to Chikwawa. The Government were quite contented to let things remain in this way, and were wont to resent any immigration from Europe or South Africa, as likely to introduce undesirable elements to disturb their lordly ease and the even tenor of their lives. But with the construction of the Shiré Highlands Railway to Port Herald, Nyasaland began to wake up. The subsequent extension of this railway, by the British Central Africa Railway Company, to Chindio, on the Zambesi, afforded rail transport from Blantyre to the river; and thus brought the commercial capital in touch with empire markets. The progress of the war caused Nyasaland to become the base of all British operations on the west of what is now Tanganyika Territory. This let some light into the country; and it was also the means of introducing numerous possible colonists from England, South Africa and Rhodesia: men who were not slow to perceive the possibilities of such a fertile soil, where everything would grow with a minimum of effort, so far as cultivation is concerned, and where the cost of native labour is low. The experience they gained while in the country, especially with respect to motor transport, led them to consider that the transport difficulties had been exaggerated by interested parties; and that they could be easily overcome by energetic and enterprising men. The available agricultural land in the country is now being quickly taken up; and it only remains for the Government to get out of its shell, descend from its narrow and lofty detachment, and build good roads. Nyasaland is capable of producing large quantities of good tobacco, cotton, tea, grain and rubber.

Rhodesia is a colony administered by the British South Africa Company, under Royal Charter. It has an area of 440,000 square miles, and its total population is about 2,000,000. The capital of Northern Rhodesia is Livingstone, and of Southern Rhodesia, Salisbury. Its exports are gold, maize, rubber and tobacco. It also produces copper ore and a small quantity of coal.

The area of the British Protectorate of **Somaliland** is about 60,000 square miles, and it is the most useless possession in the whole of the British Empire. Its revenue is said to be £40,000 ; and in the year 1918, a "grant in aid" of £85,000 had to be spent in keeping it going. From its two filthy and unhealthy little ports, Zeila and Berber, some skins, sheep, and ostrich feathers are sent to Aden ; and, during the war, about 400 of our Somali subjects sailed across and landed on the Arabian coast, quite close to Aden, to assist the Turks.

The Anglo-Egyptian **Sudan** is under a Governor appointed by the Sultan of Egypt, with the approval of the British Government. Its area is a little over 1,000,000 square miles, and its population about 4,000,000. The capital is Khartoum, at the junction of the Blue and White Niles.

At unequal distances from the West African coast lie the two British islands of **St. Helena** and **Ascension**. St. Helena was taken from the Dutch in 1673, and was used by the East India Company as a victualling station ; the only historical fact connected with it is that it was the scene of the last years and death of the great Napoleon Bonaparte. Ascension Island was taken as a naval station by the English, during Napoleon's internment, and has been occupied as such ever since.* To guard against all possibility of the prisoner's escape, the English also seized and fortified at the same time one of the three rocky islets in the extreme south of the Atlantic Ocean, 1,200 miles from St. Helena and 1,500 from the Cape, called Tristan d'Acunha, after an old Portuguese sailor of that name. The small community there was incapable of self-support. They lived on supplies from whaling vessels ; but when, for some unknown reason, the whales suddenly forsook the South Atlantic, most of the inhabitants were removed to the Cape, in 1862. The area of St. Helena is 48, and that of Ascension, 34 square miles.

The island of **Mauritius** enjoys the most healthy tropical climate in the world. It is 8,400 miles from London, and the voyage lasts 22 days. It is 2,500 miles from Bombay, and 3,800 miles from Cape Town. It is a naval, coaling and cable station. Its area is 720 square miles, and its chief occupation sugar-growing. The Seychelles Islands, 940 miles due north, and the Rodrigues, 200 miles east, are dependencies of Mauritius.

* This small island costs the British Empire £10,000 a year, and produces only turtles and crabs.

Uganda is a Protectorate in the form of a scalene triangle, having at its corners, Lakes Victoria, Albert Edward and Albert. Its importance consists in the fact that it contains the upper waters of the Nile ; and a branch of the Cape-to-Cairo Railway is certain to pass through it to join the railway from Mombasa at Port Florence. The area of Uganda is 100,000 square miles, and its population 3,500,000. The capital is Entebbe, on the northern shore of Lake Victoria. It exports cotton, coffee, rubber and cocoa. There should be no difficulty in making a " hill station " in this part of Africa ; for the Rauenzori Range, on the west of Uganda, rises to a height of 20,000 feet.

Egypt.

[Lord Milner's appointment as head of a mission to draw up a report on Egyptian affairs and devise a constitution was announced in September 1919. In an important speech in November, Lord Curzon said that Great Britain had responsibilities and duties towards Egypt which she could not forgo or disown. *Egypt could not stand alone* ; but, subject to the British Protectorate, the utmost would be done to satisfy legitimate aspirations on the part of her people, to participate, in an ever-increasing degree, in the government of the country. Lord Milner was to draft the new Constitution, after consultation with the Sultan and his Ministers and representative Egyptians of all classes. Though some may object to the policy of bestowing a Constitution on Egypt, still there is one thing of which everybody in the British Empire may be perfectly certain : neither of the noble and able statesmen who have given their approval to the policy would have thought of doing so if the results were likely to do harm to British interests or prestige ; and there are no other two men living whose opinion on this question are worth much in comparison with the decisions of the Marquis Curzon and Lord Milner. As the proposals are still subject to change, the geography of Egypt only will be dealt with. Further information about the Military Geography of Egypt will be found in the Answers to the *Examination Papers*.]

Egypt includes the valley of the Nile—" the propitious, the most gracious, and the blest," as it is called by the Arabs—as far as Akashe, above Wady Halfa, in lat. 22° N. ; the Oases, the Sinai Peninsula, and what was called the " Land of Midian," in Arabia ; having a total area of 500,000 square miles, of which 12,000 square miles consist of arable land, and 14,000

square miles are covered with water, towns, villages, canals and roads; the rest being a desert affording, at most, pasturage in a few favoured localities. The population is nearly 12,000,000, including about 200,000 European foreigners, of whom one-third are Greeks.

The very existence of the Egyptians depends on the Nile. Beginning at Khartoum, where the Blue Nile from the mountains of Abyssinia joins the main stream, we shall find to the north of this junction the first evidence of the great annual flood which comes down from May to October, reaching a maximum in August. The flood lasts on the lower Nile from June to September. The Atbara, also from Abyssinia, is only a river in the flood season, but then it adds to the amount of water; so that from Berber to Wady Halfa the flood water is fifteen times more in quantity than the water at low Nile. The flood water for the crops, which is supplied to the fields by artificial channels, is not all required when it arrives. So a dam has been erected at Assouan, to hold back the surplus water in an artificial lake, from November till March, when it is required for the fields.

During the fifty long centuries since civilisation rose in Egypt, and with all their great buildings of pyramids, temples and labyrinths, it never seems to have occurred to them to improve their water supply, until, in the last forty years, British officials introduced their system of irrigation, which had proved such a blessing to India. It was only then discovered that the *flood water* of the Nile comes from Abyssinia; while the constant supply comes from the great lakes in the south. At Assouan the dam has been built, where the river shallowed, and the navigation was impeded by rapids owing to the sudden fall there in the level of the land.

Egypt has no minerals, and no important manufactures. The land produces three crops every year, so there is no need to import grain. Frozen beef and mutton are sent from Australia to Egypt; but the Egyptian does not eat much meat, so this trade is not very large. The cotton crop of Egypt is about 700,000,000 pounds, or about 13 per cent. of the world's cotton. The United Kingdom is the principal trader with Egypt, and France comes next. All Egypt's imported coal comes from England; and some wheat and sheep are imported from Turkey in Asia. Alexandria is not only the largest port in Egypt, but in Africa.

The Suez Canal (100 miles long) is the most sensitive part

of the sea-route between England and India. But it has been proved in the war that not only could it be easily defended, but also turned into an excellent and formidable line of defence. The most important place on its banks is Ismailia, just half-way between Port Said and Suez, where the new railway crosses which goes from Cairo to Jerusalem. The canal is neutral ; it is exempted from blockade ; and vessels of all nations, whether armed or not, are allowed to pass through it, in peace or war. Still it was made to serve the strategy of Wolseley's short campaign in 1882 ; this able commander having first induced the rebel leader (Arabi Pasha) to believe that the line of invasion was to be from the direction of Alexandria.

An army in Lower Egypt (*i.e.* in and about the Nile delta) would require little more than a plentiful supply of ammunition and pontoons ; and, except for the difference in climate, the operations would be something similar to those among the canals and streams of Belgium.

During the Great War, the defence of Egypt and of the great artery dependent on it, the Suez Canal, by which supplies were sent to France, and troops brought from Australia and India, was of extreme importance for the Allies. As one of the chief objectives of the enemy, in the West, was the Straits of Dover, so his chief objective in the East, at the opening of the war, was to capture the Suez Canal and occupy Egypt. To this end, immense preparations were made by the Turco-German leaders at Damascus ; and, early in February 1915, Turkish troops reached the Suez Canal ; having successfully crossed the Sinai Desert, as other armies have done before, since the time of the Ptolemies. The Turks tried to force a passage across the canal ; but they were met with such a heavy fire from the British troops on the western bank and the French ships in the canal, that they had to fall back after heavy losses. Next day (February 3) they made another attempt to cross, and again they failed. Then the Germans stirred up the fanatical Senussi in Western Egypt, and compelled the British command to divert forces in that direction. The Senussi were defeated in fights which took place in December 1915, and the two following months. In 1916 the British force in Egypt began to advance across the desert, towards Palestine, carrying forward a railway from El Kantara, on the Suez Canal, to Katia. The Turks attacked Katia in great force, and drove back the advanced British troops. But this place was successfully recaptured by the British in

April 1916. The stubborn Turks, defeated here, but yet unbroken, now determined to try another attack on the canal, and struck fiercely at the British force, near Mohamedia. All through a frightfully hot day, in August 1916, the battle was fought; and when night came on the Turks retreated, having lost 7,000 men in killed and wounded. They did not attempt an attack in the desert again; they had had enough of the British in the open; so now they had recourse to those tactics in the employment of which the Turk is second to no other soldier in the world. They got behind their earthworks and fortifications in El Arish, Rafa and Gaza. In January 1917, the British attacked and captured the Turkish garrison in El Arish. They then attacked Rafa, a small town on the boundary between Palestine and Egypt; and it fell into their hands after a short resistance. But Gaza was a different matter altogether; and this place provided an unpleasant surprise for the British Commander.

It has happened over and over again in Turkish military history that the Turk may be beaten in one, two, three, four or five battles, and yet turns the tables on his adversary in the sixth case. In 1877, the Russians had won four complete victories before Osman Pasha beat them at Plevna, causing them a loss of 18,000 men in one afternoon. "The unbroken series of brilliant victories"* of the British Expeditionary Force in the early part of the campaign in Mesopotamia came to a full stop at Ctesiphon. And so it was with Gaza. A correct and true account of this battle has still to be written; but there is no doubt that, although some of our gallant troops at one time succeeded in getting into the town itself, we were badly beaten there, and compelled to fall back with considerable loss. Now the Turks had the same opportunity which Osman had at Plevna; and (contrary to the advice of the German, Von Sanders) they made the same bad use of it. In June 1917, that able and experienced soldier, General Allenby, appeared on the scene and took over the command. The Turks soon found that they had to deal with quite "a new sort of tiger"; for, after a few weeks spent in the necessary preparations, operations followed in which the British arms were crowned with unbroken success. Allenby began by attacking the Turkish base at Beersheba, and annihilating its garrison, on the last day of October. He then turned his attention to Gaza;

* Mr. Asquith, in the House of Commons.

and, overcoming a gallant and stubborn resistance, captured this place, taking large quantities of munition and supplies. He drove the Turks before him, out of Ascalon ; and, on December 11, 1917, he entered the Holy City of Jerusalem, which had not had a Christian conqueror and British soldier within its old walls during 730 years of Mohammedan domination.

In the early part of the war, a number of enthusiastic Mussulmans were dreaming of a Great Mohammedan Empire stretching from Samarkand to the Nile, and from the Bosphorus to Bengal.* But the dream has vanished, like that of the King of Babylon, in which the great image was smitten by a stone cut out without hands ; and its iron and clay, and silver and gold, were broken to pieces together, and made like the chaff of the summer threshing-floors ; while the stone that smote the image became a great mountain, and filled the whole earth.

British North Borneo.

This part of our Eastern Empire is administered by the British North Borneo Company, under Royal Charter. Its area is 31,000 square miles, and its population 300,000. The little State of Brunei is under the Governor of the Straits Settlements, and has an area of 4,000 square miles. The territory of the Rajah of Sarawak contains 50,000 square miles. In minerals it is proving to be one of the richest countries in the world. It produces coal, iron, oil, gold and silver. Its trade in rubber and timber is also flourishing. It has a contented population, which makes it a safe and peaceful country for the few Europeans there. The island of Labuan, near Brunei, is about 900 miles from Singapore, and 1,100 miles from Hong Kong. And these three places would form an important strategic triangle, strong and self-contained (having plenty of oil and coal at hand), which our naval strategists would, no doubt, make the best use of, in case of serious trouble in the Far East.

Cyprus is under a High Commissioner with the usual powers of a Colonial Governor. Its area is 3,400 square miles, and its population 300,000. It exports small quantities of cotton, wine and currants. Its capital, Nicosia, is 115 miles from Beyrout, the principal seaport of Syria (and terminus of a railway from Damascus), and 240 miles from Port Said.

* From March to June, 1916, a weekly paper was published in Teheran, written and printed in Persian, French and German, in which this great empire was foreshadowed, *under the protection of Germany*.

The **Falkland Islands**, near the extreme south of South America, in the Atlantic, form a Crown Colony, with an area of 7,000 square miles, and a population of about 4,000. Has a climate similar to that of the North of Scotland. Would suit Scotch emigrants; it has no income-tax; the price of the best mutton is threepence a pound, and the price of land five shillings an acre. The sheep in the islands are worth £10,000,000; and the war demand for wool was so great that every man, woman and child has an average of £35 in the savings bank. Admiral Sturdee defeated and destroyed a German fleet here, in December 1914. The group lies about 500 miles to the north-east of Cape Horn. The capital is Port Stanley, which is connected by cable with England; and the British mails are delivered here twice a month.

A full account of the **Federated Malay States** * will be found in the Answers to the *Examination Papers*.

The **Fiji Islands** form a Crown Colony, with an area of 7,000 square miles, and a population of 170,000. The capital is Suva, on Viti Levu. They lie 5,200 miles from Vancouver, the voyage taking 18 days by the C.P.R. steamers; and 1,700 miles, or 6 days' voyage, from Sydney. From Suva to Honolulu (the American naval base in the Sandwich Islands) is 2,700 miles; and the All-Red cable, coming from Norfolk Island, touches at Suva, then going on through Fanning Island to Vancouver. The exports of the islands are sugar, copra, fruit and rubber.

Gibraltar is a Crown Colony with an area of very nearly 2 square miles, and a civilian population of 20,000. It is a fortified coaling and cable station, and port of call, 1,200 miles from London.

Hong Kong and Kowloon. This is a Crown Colony, with an area of 400 square miles and a population of 500,000. Before the war, Hong Kong was the largest seaport in the British Empire in point of trade and tonnage. It is the headquarters of the British Fleet in the waters of the Far East; a fortified coaling and cable station, and is indicated as the base for naval and military operations on the Asiatic side of the Pacific. It lies about half-way between Singapore and Yokohama, 1,500 miles from each; and Yokohama is 4,300 miles from Vancouver. Hong Kong, with Kowloon, is the natural gateway to the vast territory of Southern China; and it is because of the importance

* They are: Kedah, Kelantan, Pahang, Selangor, and Negri Sembilan. Johore is independent.

of this gateway that this colony deserves a higher place than is generally accorded to it. But it is on account of the coal-bearing and metal-producing lands of Kowloon that it has promise of a great future. Large concessions have already been obtained here from the British Government; negotiations are pending with the Canton Government for concessions in the rich province of Kwang Tung; and there is every prospect that within a short space of time coal and steel will be delivered in Hong Kong at prices which will cause a revolution among the industrial interests of the Far East. Hong Kong bids fair to be, in time, one of the largest industrial centres in the world. This colony means a great deal more to the British Empire than is often realised, and may even mean more in the future. Big developments are on foot, and important schemes are being projected. And now what Hong Kong needs more than anything else is the ready help and intelligent sympathy of the British people, and more liberality in the support hitherto accorded from official quarters.

If a fighting force had to be concentrated at Hong Kong, it would be sent from the United Kingdom, Canada and Australia. From Southampton, or Liverpool, to Hong Kong, is the same distance (10,000 miles) whether the route is by the Suez Canal and Singapore, or by the North Atlantic, Canadian Pacific Railway and North Pacific route. So that it would entirely depend on circumstances as to what would be the best way to send the United Kingdom force. But if the concentration had to take place between May and September, the Canadian route would be preferable, mainly on account of climatic conditions. The troopships bringing the Australian force could get to Hong Kong in 12 or 14 days. If Australia or Canada refused to take part in the operations, the Suez-Canal-Singapore route would be used.

Malta is a Crown Colony, with an area (including the island of Gozo) of 118 square miles, and a population of 220,000. The capital is Valetta, a strongly fortified coaling and cable station. Malta is situated about half-way between Gibraltar and Port Said, 980 miles from each; it is 660 miles from Marseilles, and 840 from Constantinople. It is the great dockyard of the Mediterranean Fleet, and a most important stepping-stone on the route from England to India and the Far East. But when Europe settles down, and when direct trains are running from Calais to Karachi—which will be far more important than Cape-to-Cairo—Gibraltar and Malta will lose much of their present

importance, and become merely ports of call for merchant vessels.

Papua, or British New Guinea, is a Territory of the Commonwealth of Australia, with an area of 100,000 square miles, and a population (as far as can be ascertained) of about 350,000. It is said to be very rich in minerals, and even oil has been talked about as one of its products ; but it will be some time before anything positive can be said about this or the value of its gold. Australia is making worthy and conscientious efforts to ameliorate the condition of the natives ; and it was time that she should take up this question ; for the "blackbirding " and brutal conduct of the Queensland traders were a disgrace to humanity. But it is doubtful whether anything can be done for the Papuans, as they seem to be the most degraded and demoralised race on the face of the earth. They have actually sunk so low that they take a delight in paying their taxes : "when the tax-gatherer arrives he is welcomed with cheers and other forms of native gratification ; when he leaves he carries the memory of unassuaged and bitter tears of regret." * Any attempt to civilise such degraded beings seems hopeless.

The West Indies.

Beginning off the coast of South America, latitude 10° N., and longitude 60° W., at the delta of the River Orinoco, and sweeping round in a large irregular curve, north and west, we pass through the Windward Islands, the Leeward Islands, then the larger islands of Puerto Rico, San Domingo, Jamaica and Cuba, with the Bahama Islands lying to the north of these. To form an idea of the distances in the West Indies, take the middle of Jamaica as centre, with a distance of 700 miles as radius, and the circumference of our circle will pass through British Honduras, direct west, the Panama Canal, south-west, Puerto Rico to the east, and the Bahamas and the middle of Florida to the north. And this also will be the distance of Puerto Rico from the South American coast opposite the island of Trinidad. From Southampton *direct* to Colon (the Atlantic entrance to the Panama Canal) through the "Anegada Passage," is 4,000 miles ; but from Southampton to Jamaica is 4,700 miles, and the voyage takes 16 days.

The British Possessions in the West Indies follow, in alphabetical order :

* *Times* Correspondent : Imperial Supplement.

Bahamas : Crown Colony. Area, 4,400 sq. m. ; pop. 60,000.
Capital, Nassau.

Barbados : Crown Colony. Area, 170 sq. m. ; pop. 190,000.
Capital, Bridgetown.

Bermuda : Crown Colony. Area, 20 sq. m. ; pop. 20,000.
Capital, Hamilton.

(*British Guiana*, on the mainland of South America ; the most flourishing British Colony in the tropics. Crown Colony. Area, 90,000 sq. m. ; pop. 400,000. *Capital*, Georgetown.)

(*British Honduras*, on the mainland of Central America. Crown Colony. Area, 8,500 sq. m. ; pop. 45,000. *Capital*, Belize.)

Jamaica : Crown Colony. Area, 4,500 sq. m. ; pop. 900,000.
Capital, Kingston.

Leeward Islands : Crown Colony (including Antigua, St. Kitts, Dominica, Montserrat and the Virgin Islands). Area, 700 sq. m. ; pop. 135,000.

Trinidad and Tobago : Crown Colony. Area of Trinidad, 1,750 sq. m. ; pop. 360,000 ; and of Tobago, area, 114 sq. m. ; and pop. 23,000. *Capital*, Port Spain.

Windward Islands : Crown Colony (including St. Lucia, St. Vincent, Granada and the Grenadines). Area, 524 sq. m. ; pop. 180,000. *Capital*, Castries.

The total area of the British West Indies is about 12,000 square miles, and the total population not more than 1,900,000. Bermuda is 800 miles from the eastern coast of the United States.

The exports of the British West India Islands are as follows :—

Jamaica : Cocoa, coconut, bananas, logwood and raw sugar.
 To the U.K., U.S.A. and Canada.

Trinidad : Asphalt, oil, cocoa, fruits and raw sugar. To the U.K., U.S.A. and Canada.

Leeward Islands : Cocoa, limes and raw sugar. To the U.K. and Canada.

Barbados : Raw sugar. To U.K., U.S.A. and Canada.

Bahamas : * Hemp, fruit and sponges. To U.S.A.

* The Bahamas are remarkable in that they are the only British Colony without a public debt. The reasons for their good financial standing are, first of all, their geographical position close to the American coast ; and, secondly, the nature of their trading operations. During the American Civil War (1861–1865), NASSAU, the capital, was the base of operations for

Bermuda : Onions and potatoes. To U.S.A.

British Honduras produces mahogany, logwood, cedar and rubber. British Guiana exports rice to all the islands of the British West Indies ; and gold, which is exported to the United Kingdom.

The British Empire produces one-third of the world's cane sugar ; and one-tenth of this is produced in the British West Indies and Guiana.

Among the smaller British possessions in other parts of the world, the only two worth any special attention are **Wrangel Island** and **Zanzibar**. The former lies in the Arctic Ocean, off the north-east coast of Siberia. It was annexed to the British Empire in September, 1921.

The Zanzibar Protectorate has an area of 1100 square miles and a population of 200,000. For many years Zanzibar was the headquarters of Arab trade and commerce in the Indian Ocean and East Africa, and the place of concentration for caravans about to cross Africa from east to west. Before the rise of Mombasa and Dar-es-Salaam, and when these ports were not yet railway termini as they are now, Zanzibar was the most important seaport in East Africa. It is comparatively healthy and fertile, and it supplies the world with the best **cloves**.* The port of Zanzibar is on the west coast of the island, and has a magnificent harbour. In 1890 England established a Protectorate over this island and Pemba Island, close by to the north, by Treaty Cession. A force stationed at Zanzibar would be most conveniently situated to carry out operations in Central Africa, by the railways from Mombasa and Dar-es-Salaam, to Port Florence (Victoria Nyanza) and Kigoma (Tanganyika) respectively.

The two best authorities on maritime strategy, in its higher and broader aspects, are Admiral Mahan and Sir George Aston. They have stated that *the strategic position of Jamaica is one of the most important in the world*. The reasons for this are,

“blockade runners” ; and sites for warehouses and stores in this little port cost as much as if they were in the centre of London. And now, since the United States Government has stopped the trade in intoxicating liquors, the wine and spirit trade in Nassau has run into millions sterling. The majority of the merchants engaged in the business are Jews and Greeks.

* The clove is simply the dried flower-bud of a small shrub, and it is found also in Java and the Moluccas Islands,

first of all : Owing to her geographical position, she commands all the trade-routes in the northern, western and southern sections of the sea in which she is situated. She is on the flank of the direct route between New Orleans and the Panama Canal ; she is 1,200 miles from New York, 1,300 from the Eastern Caribbean, less than 700 from the Canal, and 4,000 from Southampton. The most direct route from New York to the Canal is through the " Windward Passage," between San Domingo and Cuba ; and Jamaica is in the best position to command the mouth of this maritime defile. Her principal harbour, Kingston, is in a good position and could be easily defended ; and the island is very rich in food supplies. A British cable connects it with Bermuda and Halifax ; and the continuation of this cable goes through the Leeward and Windward Islands, to Port Spain in Trinidad, and on to Georgetown in British Guiana.

St. Lucia is the Gibraltar of the West Indies ; and the harbour of its capital, Castries, is as fine as Milford Haven. St. Vincent and St. Kitts produce cotton ; and Montserrat is well known as producing a famous lime-juice.

What the produce of our Colonies and Dominions has to do with Military Geography may not be apparent at first glance. But it will appear if we remember that a fleet or army going to any part of the world will require food, drink, clothes and other necessities of life there, just as much as in Aldershot or Malta. But there is still a broader aspect to this, which cannot be better expressed than in the remarkable words of our great statesman, Lord Milner. He says :

" Some of our Colonies are already important producers of foodstuffs and raw material which are of primary importance to the industries of mankind : rubber, tin, oil, fats, cotton, and other vegetable and mineral products of great value. But their output of most of these things is still in its infancy, and the room for expansion is simply enormous. And there are special reasons why we should seek rapidly to increase that output at the present time. For all its wealth, the United Kingdom is not economically self-sufficient. We have to import great quantities of food, and of raw materials for our manufacturing industries. And we shall need ever increasing quantities of raw materials especially if we are to come effectively to the assistance of those countries whose stocks have been so greatly depleted by war. But it is not easy for us now to pay for our imports. Before the war we paid for them by the income derived from our foreign

investments. That income came to us mainly in the form of imports over and above the imports paid for by our exports. But as a consequence of the war our foreign investments have been greatly reduced. We have parted with about a thousand million pounds of foreign securities, and at the same time we have contracted something like that amount of debt abroad. We shall, therefore, have in future to export more, if we are to maintain, not to say increase, our imports. But this will not be an easy matter, because it is not only a question of production, but a question of markets. We have not only to make ever so many things, but to find some one to buy them. And it may well be that the countries from which the bulk of our imports come, being great manufacturers themselves, may not want our manufactured goods, or may not want them to the extent which would be necessary if we had to pay those countries directly for all that we have to buy from them. But here comes what is called *the triangle of trade*. If we are not able to pay our creditors in goods supplied to them by ourselves, we may yet be able to pay them by goods supplied from other countries which are debtors to us because we have invested money in their development. Now all great industrial nations of the world have a constant and increasing demand for the foodstuffs and raw material which our Colonies and Protectorates can supply. Our creditors may not so much need our manufactured goods; but they do need, and will need ever more and more, the rubber and oil and tin and cocoa and tropical fruits which our Colonies in East and West Africa, Malaya and the West Indies, can furnish. And, on the other hand, these tropical possessions of ours do need our manufactured goods, not only for consumption, but, above all, for their own development as producers. More than anything else they need the means of transport and communication: roads, railways, ports and telegraphs; and the material for all these we are eminently in a position to supply."

From this we can see that one of the greatest assets of the British Empire is the products and exports of our colonies; and is therefore one to be dealt with in political, commercial, or military geography.

Some of the most important decisions of the **Imperial Conference**, specially relating to the new scheme for Imperial Defence and the new rôle of the Dominions, were made public in the end of July 1921.

It was agreed to re-affirm the policy that each Dominion will provide its own navy; to consider the need for providing oil

storage at all the important Naval Bases ; to make the Dominions responsible for the protection of coastal trade in time of war ; to make arrangements for the Dominions to assist in working the convoy system in time of war, and for this purpose to provide suitable vessels. The effect of the decisions is to co-ordinate the Naval Forces of the whole empire, with a view to maintaining vital sea communications in time of war, and to make the Dominions able to defend themselves. Some Dominions, under the stress of war, have already gone far in this direction, and a start has been made with capital ships ; whilst others are still in a state of making provision for maintaining naval and defence bases, and dockyards. South Africa is falling into line generally in these respects, and especially with regard to local defences, such as those at Simonstown and elsewhere, which have received the closest attention in view of their outlying strategic situation. The new scheme will replace the old arrangement of money contribution ; it is looked upon as the most satisfactory arrangement on both sides, because it firmly lays down the basis of a mutual co-operation.

CHAPTER III

THE NEW MAP OF EUROPE

The Treaty of Versailles.

On Sunday, June 29, 1919, the German plenipotentiaries signed the Treaty of Versailles, in the historic building where the German Empire had been proclaimed forty-eight years before; and the Great War was over.

The first twenty-six articles of the Treaty establish and deal with the League of Nations.

Then come the terms of the territorial treaty with Germany. According to these, Germany surrendered :

In Europe : Alsace-Lorraine, to France ; area, 5,600 sq. m. ; pop., 1,900,000. Posen and West Prussia, to Poland ; area, 18,000 sq. m. ; pop., 4,800,000.

Germany agreed that a plebiscite should be taken to determine the future of the following territories :—

East Prussia and Silesia, portions of which have been claimed by Poland ; area, 12,000 sq. m. ; pop., 2,000,000. Schleswig, claimed by Denmark ; area, 3,600 sq. m. ; pop., 500,000. Malmedy, claimed by Belgium ; area, 400 sq. m. ; pop., 5,000.

Germany ceded to the League of Nations :

The Saar Basin (coalfield) ; the final ownership to be settled by plebiscite after 15 years ; area, 500 sq. m. ; pop., 200,000. The port and neighbourhood of Danzig ; area, 500 sq. m. ; pop., 200,000. And, to the Associated Powers, the district of Memel ; area, 500 sq. m. ; pop., 40,000.

All the German Colonies were surrendered, and distributed as follows :—

South-West Africa : area, 320,000 sq. m. ; pop., 120,000.

To the Union of South Africa.

East Africa : area, 380,000 sq. m. ; pop., 8,000,000. To Great Britain and Belgium.

Kameroons : area, 290,000 sq. m. ; pop., 3,600,000. To Great Britain and France.

Togoland : area, 33,600 sq. m. ; pop., 1,100,000. To Great Britain and France.

Pacific Islands : area, 96,000 sq. m. ; pop., 700,000. To Great Britain and Japan.

Kiao-chau : area, 200 sq. m. ; pop., 180,000. To Japan.

Germany's lost Colonial Empire had a total area of about 1,130,000 square miles, and a population of nearly 14,000,000. The territory in Europe which no longer forms part of Germany has an area of 40,000 square miles, and a population of 9,500,000. This leaves the area of Germany, as it is at present, 168,000 square miles, and her population about 56,000,000.

Germany recognised the independence of two new states, Poland and Czecho-Slovakia, and also the entire independence of German Austria. She further recognised the abrogation of the treaties establishing the neutrality of Luxemburg and Belgium, and cancelled her treaties with Luxemburg.

The Naval and Military Terms of the Treaty followed. German territory west of the Rhine, together with the bridge-heads at Cologne, Coblenz, Mainz and Kehl, to be occupied by the allies for 15 years. Germany is not to maintain or construct any fortifications, or maintain any armed forces, west of a line drawn 32 miles east of the Rhine.

Compulsory military service is abolished in Germany ; the German General Staff is dissolved ; and the strength of the German army must not exceed 100,000 men. No increase in military officials, and no military reserves. Military manœuvres must not be held, and there must be no arrangements for mobilisation. The manufacture of munitions, poison gas, tanks and armoured cars, is forbidden. The fortifications of Heligoland and all works commanding the routes between the North Sea and the Baltic (Kiel Canal) to be demolished. The German Fleet to be surrendered, with the exception of 6 battleships, 6 light cruisers, 12 destroyers and 12 torpedo-boats. No submarines to be retained or built ; and the strength of the German

navy not to exceed 15,000 men. The maintenance of German military or naval air forces is forbidden.

The next Articles of the Treaty were evidently inserted *ad captandum vulgus*; as those who drew up the Treaty have made no efforts to carry these terms into effect. A special tribunal was to be constituted to try the German Emperor "for a supreme offence against international morality and the sanctity of treaties"; to fix the punishment which should be imposed (naïvely anticipating the verdict), and to request the Dutch Government to surrender the ex-Emperor.

Germany accepted responsibility for all loss and damage caused to the Allies by the war. The Allies recognised that her resources were not equal to make complete reparation for all such loss and damage, but they required a payment of £1,000,000,000 in gold, goods or ships, before the summer of 1921.

All German submarine cables were surrendered, and form part of the reparation.

Germany renounced her rights in Siam, China, Liberia and Morocco; recognised the British protectorate in Egypt; accepted in advance the allied settlement in Bulgaria and Turkey, and agreed to restore all allied property in Germany. The waterways of the Elbe, Oder, Niemen and Danube were placed under international commissions, as well as the Rhine and Moselle; and the Rhine bridges on the Alsace-Lorraine frontier became the property of France.

Going in detail through the changes effected by this historic Treaty, the following facts will be found useful:—

The restoration of Alsace-Lorraine is of great economic importance to France, apart from its political aspect. This part of France possesses valuable coal and iron mines, potash deposits, vineyards and good agricultural land. Kehl, the Rhine port opposite Strasburg, is transferred from Baden to France. The cheapest route for goods traffic from the Atlantic to Central Europe is from Antwerp to Strasburg, by canal and river. From the Rhine, by the Main, the Ludwig's Canal, and the Altmühl, it is easy to get on to the upper Danube, above Ratisbon; above Strasburg a canal takes off, which joins the Rhine with the Rhône; and, below it, the Marne Canal (crossing the Vosges at the Gap of Saverne) joins the Rhine with the Seine system of Canals.

(a) In Central Europe, the Austro-Hungarian Empire is replaced by three Republics: *Czecho-Slovakia*, *Austria* and *Hungary*.

Czecho-Slovakia,* with an area of 60,000 square miles, and a population of 14,000,000, is the old Kingdom of Bohemia, together with Moravia and part of Galicia. Bohemia is a great industrial centre for coal, iron, glassware, beet-sugar, and rolling-stock.† It will also be rich in timber, since 6,000,000 acres of forest have been acquired from Hungary. It has no seaport; but it commands the head waters of the Elbe, Oder, Vistula and March (a large tributary of the Danube).

The new *Republic of Austria* has an area of 32,000 square miles and a population of 6,000,000. It very nearly corresponds with the pre-war Austria, except that the Trentino has gone to Italy. Vienna is the capital; but sadly shorn of its former glory, beauty and wealth.

The *Republic of Hungary* has now an area of 36,000 square miles, with a population of 8,000,000. It is now only one-third of its pre-war size; having lost 60 per cent. arable land, 85 per cent. forests, and 65 per cent. of its railways. The capital is Buda-Pesth.

The *Republic of Poland* has an area of 135,000 square miles and a population of 36,000,000. Its frontier is not yet settled, but it is allowed freedom of communication with the Baltic through the Free Port of Danzig. Poland has great natural resources, in grain, timber, oil, iron, naphtha and salt. It is calculated that the Jews inhabiting Poland number 3,500,000.

Along the Eastern shores of the Baltic are four new Republics:

Lithuania: area, 45,000 square miles; population, 2,000,000, and capital Kovno; *Latvia*, or Lettland: area, 40,000 square miles; population, 1,800,000; capital, Riga. *Esthonia*: area, 25,000 square miles; population, 1,000,000; and *Finland*: area, 125,000 square miles; population, 3,500,000. These four Republics enjoy the doubtful privilege of being recognised by the Moscow Soviet; and the great Baltic port of Riga is at the disposal of the Bolsheviks. The only one of them which can rightly claim a separate nationality is Finland, the inhabitants of which are of Turanian origin, akin to the Hungarians and Turks.

* The word written *Czech* is pronounced *Tshech*, with *ch* guttural, as in *loch*.

† No other country in the world has such rich deposits of *radium* as Bohemia. These are found in Joachimsthal, about ten miles to the north of Karlsbad. The quarries, in which Madame Curie discovered this wonderful and precious element, are now leased to an English company.

Of the other numerous Republics, Absolutisms, Despotisms and Anarchies into which Russia has been split up, the only part dealt with here will be the Ukraine.

As far as can be known about the *Ukraine Republic*, its area is 400,000 square miles and its population 34,000,000. Its capital is Kieff. Its iron mines yield 7,000,000 tons of ore, and its petroleum wells 34,000,000 quintals* annually. It ranks third among all countries which produce manganese. It is the greatest sugar-producing country in Europe (from beet). During the second year of the war it produced 17,000,000 quintals of beet-sugar; and the beet-sugar of the Ukraine is far sweeter than that of any other country in the world. It is also rich in agricultural produce, horses and cattle.

The Balkan lands have by no means settled down yet; and the most disturbing element here is the greed and ambition of the State who owed its very existence to France and England, who repaid them with the blackest ingratitude and basest treachery, and who is still fighting against Turkey. No so-called "settlement" could be more of a blundering and disgraceful injustice than the giving of even a square yard of the Ottoman Empire to Greece. Turkey fought against the Allies; true: but she fought them in the open; and took her defeat well, as she has always done. It is unnecessary to mention how the Greeks fought the allies, and how they could never be trusted, "even when offering gifts," as of old.

In accordance with the conditions of the abortive Treaty of Sevres, 1921, the Entente Allies presented Greece with the large Turkish port of Smyrna and the best part of Asia Minor.

Greece promptly demanded the surrender of the assigned territory; to which the Turkish Commander-in-Chief, Mustafa Kemal Pasha, replied with the ominous classic of Leonidas, "Come and take it!"

The Greeks had evidently forgotten their severe lesson of 1897; when, among other episodes, their consul had officially complained that some Jewish shopkeepers in Saloniki were doing a roaring trade in boots for champion long-distance athletes, by advertising them as the same sort that had been supplied to the Greek army.

With tremendous enthusiasm the transports kept going backwards and forwards between Piraeus and Smyrna all through May and June, 1922. Mustafa Kemal, with eagle eye and grim

* A *quintal* is a few pounds less than the British hundredweight.

smile, waited quietly behind the Kizil Irmak. When the Greeks had passed eastwards through Smyrna, without opposition, all Athens was decked with gay colours ; and the editor of a newspaper in the capital, a sort of modern male Cassandra, indiscreet enough to reproduce in his columns the well-known old fable of the "Travelled Dog,"* narrowly escaped tearing to pieces by the mob, and had his office reduced to matchwood. On August 4, 1922, Mr. Lloyd George said, "The Greeks have established their military superiority in every pitched battle." While these words were being uttered the Turks were chasing the Greeks all over the Anatolian plateau like flocks of scared and terrified sheep. Then the Athenian politicians took a hand in the game, and executed a few of their brother politicians and officials *pour encourager les autres*. For the third time, Constantine, the ex-Kaiser's brother-in-law, was kicked out, and he died a few weeks after his expulsion.

The only thing left for Greece now is to join the Little Entente and allow Jugo-Slavia free access by rail to her splendid harbours ; to abandon heroics and swollen heads ; and to bear in mind that Themistocles and Xenophon are as dead as Julius Cæsar.

The ancient Kingdom of Serbia has increased from 20,000 to 87,000 square miles ; its population has risen from 2,800,000 to 12,000,000. Its capital, Belgrade, is no longer dangerously situated on its frontiers on the side towards its hereditary enemies ; it has now a sea-coast 300 miles long, and the name of the state is *Yugo-Slavia*† ; according to the "Declaration of Union" (1918). The "Czar" of Bulgaria, ex-Field Marshal of the German army, caused *Bulgaria* to lose the Strumnitza district to Jugo-Slavia, and the Ægean littoral to Greece ; though, if hard fighting constitutes a legitimate claim, some men of the Sinn Fein Republic had a much better title to Salonika, though they did not think of putting it forward. *Roumania* is now twice its former size ; its area is 100,000 square miles, with a population of 13,000,000.

* A conceited poodle who had travelled in the East was speaking with great contempt and scorn of the home-staying dogs in his village. "In India," said he, "I have known dogs to attack a tiger." "But did you ever hear that they had beaten the tiger?" asked an old collie. "That I can't exactly say," replied the boaster ; "but just imagine, all the same, what fine fellows they must have been, to attack a tiger!" "Well," said the collie, "if they didn't beat the tiger, I don't see that they were in any way better than ourselves, and they must have been much greater fools."

† "The country of the Southern Slavs." *Yug*, sometimes written *Jug*, is the Slav for "south." It includes Serbia, Montenegro, Croatia, Slavonia, Bosnia, Herzegovina, and parts of the Banat (Hungary), Carniola, and Styria.

It got half the "Banat," the whole of Transylvania, and the Bukovina, from Hungary; and Bessarabia from south-west Russia. The Dniester forms a good natural line of defence for its eastern frontier; it holds the mouth of the Danube; and its capital, Bukharest, is the largest entrenched camp in Europe.* In grain, meat and foodstuffs, Roumania is, for its size, the richest country in the world; in the year 1828, a Russian army of 80,000 men lived in it for five months without drawing any supplies from their base in Russia. In the years immediately preceding the war, the oil-fields of Roumania were becoming known all over Europe; but, on the approach of Mackensen's invading force, in 1917, the owners followed the example of the inhabitants of Moscow at the time of Napoleon's invasion, and effectually prevented the oil supplies from being of any advantage to the invader, or to anybody else.

The Dardanelles, the Sea of Marmora, the Bosphorus, and a strip of land on either side, are controlled by a Commission of the League of Nations.

(b) This **Treaty** differs from all other Treaties in European history in that it takes cognisance of the claims of nationality. The conditions imposed by it on Germany are undoubtedly severe; but, all things considered, they are only justly retributive. The Allied Statesmen are not likely to forget the very important fact that European civilisation depends on the survival of Germany; and that, little as she deserves it, she should be given an opportunity to pay the debt she rightly owes and has promised to pay. Otherwise she will be driven into the arms of Bolshevism, and the "Buffer States" will not be able to stop this. The Treaty represents an ambitious attempt to solve all the chief causes of unrest in European politics; and it certainly has begun well by the establishment of the new States as far as possible on the basis of nationalism. It is the greatest political experiment ever tried; and time only can tell whether it is going to succeed.

The new Poland has the effect of completely separating two important sections of Germany. This was foreseen by Bismarck, who, when the scheme for the restoration of Poland was presented to him, in 1848, said, "It would sever the most important arteries of Prussia." Politically, Poland will be of the greatest importance in acting as a barrier between Germany and Russia, whose possible alliance would go far to destroy European civilisa-

* If Paris be looked upon as an "entrenched camp," it comes first.

tion. In 1866, immediately before the outbreak of the Sadowa Campaign, Von Moltke said that both from a strategical and a political point of view, Hanover was a factor of the greatest weakness to Prussia, separating, as it did, Brandenburg from Rhenish Prussia, as Poland will now separate it from East Prussia. But for this Germany has only herself to blame; and when her representatives at Versailles raised bitter protests in regard to the new Polish frontier, we can excuse the stinging retort of M. Clemenceau that if anybody had to suffer from frontiers it must be Germany.

Czecho-Slovakia is surrounded by five different States: Hungary, Ukraine, Poland, Germany and Austria. None of these have any particular friendship for her, and she is bitterly hated by the Magyars and Germans. Her frontiers are weak; the Böhmer Wald, on the west, separates her from Bavaria; the Erz Gebirge, on the north, from Saxony; and the Riesen Gebirge from Silesia. But on the east and south she has nothing that can be called a defensive frontier; and the Magyars of Hungary are rough playfellows. No doubt the Czech statesmen will see that it is their best policy to live in peace with their neighbours, as far as possible, and to make their capital, Prague, which is the geographical centre of the European Continent, a centre of commerce, peace and prosperity.

Roumania has the Danube between her and Bulgaria for the greater part of her southern frontier; and the Dniester between her and the Ukraine Republic. But her western and north-western frontiers are open and defenceless, and she has a good many Hungarians among her new subjects.

Italy has shown herself to be inordinately greedy and ambitious; she wishes to include Albania, and its port Avlona, in her sphere of influence. There is no love lost between her and the new State of Jugo-Slavia; she already looks upon the Adriatic as her own, and is doing all she can to command the 50 miles of strait which joins it to the Mediterranean. But Serbia has suffered more than enough of economic injustice and insolence from her former northern neighbour; so she is not likely to acquiesce in being now shut out from the commerce of the Mediterranean. In this case, as well as in all the others, the success of the Treaty of Versailles entirely depends upon the extent to which the European nationalities show mutual toleration and a desire to walk in the paths of peace.

The Little Entente

Before the Great War there were twenty-six States in Europe ; to-day there are thirty-five. And it is only in the nature of things that these will finally settle down into various combinations, or unions, according to conditions, interests, or requirements, for the general purposes of trade, defence, and mutual protection. Such groupings are already foreshadowed by what is called the " Little Entente."

The causes which led to this combination, between Czecho-Slovakia, Roumania and Jugo-Slavia, are, first of all, the realisation by these Powers that secret arrangements are already in hand against them, with a view to their exploitation and disadvantage ; that underhand negotiations are taking place, from the effects of which they are likely to suffer ; that the sacrifice of friends to former enemies has always been a common and favourite old trick with the Great Powers ; and that any practical assistance they might expect from the League of Nations would be of no more use to them than throat gargle to a sick puppy.

The three States of the Little Entente are well aware that if they are to live at all within the limits assigned to them by the Peace Conference, they must unite for their common protection ; and they have been intelligent enough to perceive that their economic welfare will be proportional to the extent of their interdependence.

Industrial Bohemia requires Roumanian oil for its machines, Roumanian grain for its manufacturing population, as well as beef and bacon from the cattle and pigs of Greater Serbia. In return, Bukharest and Belgrad will get, cheaply conveyed to them by the waters of the March and the Danube, machinery, coal, clothing material, glass, and beet sugar.

Politically and geographically, Roumania is the link between the other two. Although her population is not Slav, as are the Czechs and Serbs, still she willingly made common cause with these, having recognised her dangerous position ; the upper millstone of Bolshevism on one side, and the truculent militarism of the Magyar, the nether millstone, on the other. Having once joined the Little Entente, Roumania let it be clearly known that she had made up her mind to exploit her own oil-fields and had no intention of handing them over to England, France, or America. This may help to explain the sneers at the expense of the Little Entente in the Anglo-American Financial Press,

In the shuffling of the other cards in the European pack the Little Entente is, by all accounts, to be balanced by a "Danubian Federation," to include Bavaria, Austria, and Hungary; such a union would be strongly supported by France.

The States of the Little Entente deeply distrust Poland, and not without reason. Poland and the Poles have done no great good in or to Europe since the day when John Sobieski beat back the Turks from the walls of Vienna.

As a result of the staggering blows of Mustafa Kemal, Greece is now very anxious to come into the Little Entente; and the Ukranian Republic has also shown inclinations in the same direction.

The Little Entente tends to add to the stability of the political conditions in Central Europe, and it gives the people of the three States greater confidence in their united strength. The avowed object of their statesmen is to prevent the Magyars from forming a nucleus of unrest in Central Europe. The absence of love on the part of France for the Little Entente is because the now proud and victorious Republic sees in the move an attempt to shake off French tutelage, and again because the Entente shows no overwhelming desire to embrace the *protégée* of France round the corner in the Vistula corridors.

Let us now consider the larger question of which the Little Entente is only a small part. Both political and geographical conditions combine to demand the erection of a strong barrier between Russia and Central Europe. On the east we have a State which has fallen lower in the scale of humanity than any of the old Arab kingdoms in Central Africa; in civilised Europe we have countries and peoples in a condition of political distraction and economic disorganisation, containing a sullen and discontented proletariat ready to accept any political nostrum and having faith in none. Therefore the European problem is to close the westward outlets against Bolshevism. And it is here that a knowledge of geography is absolutely essential to European statesmen.

There are two main approaches from Russia to civilised Europe: (i) the wide gap between the Carpathians and the Baltic Sea, and (ii) the narrow gap between the Carpathians and the Black Sea. Poland lies across the first, Roumania in the second; and these two States also cover the passes of the Carpathians. Between the two gaps the Carpathians rise, as an obstacle to a westward advance from Russia. Hungary is the

State within the Carpathians, and herein lies its great political importance. A Bolshevik Hungary would threaten both Poland and Roumania as well as the inner flanks of the two gaps. Hungary also controls the gateways and waterways to Central Europe. Between the western end of the Carpathians and the Bohemian Mountains lie the "Moravian Gates," leading down to Vienna and the Danube valley. It is a matter of life or death for Czecho-Slovakia to keep these gates securely bolted. Also Hungary commands the southern approaches to Vienna, as well as the eastern approaches to Italy along the valley of the river Save, leading to the plateau of Laibach and the historic gap between the Carnic and Julian Alps.

As far back as the year 1918 the Bolsheviks' leaders were cunning enough to appreciate the enormous importance of Hungary in their plans for over-running Europe; so they made the most strenuous efforts to establish their power in Hungary, and they succeeded in setting up, in Buda-Pesth, a Soviet Republic under the dictatorship of Bela Kun. They baited their trap with many gold roubles, and the unfortunate Magyars were caught like sparrows. But then Czecho-Slovakia, Roumania, and Jugo-Slavia woke up. They saw what was the right thing to do, and they did it. Standing shoulder to shoulder for the first time in history, they wiped out Bela Kun, saved Europe, and established the Little Entente.

In addition to what is laid down in the Introduction to this book about the nature and use of Military Geography, it is necessary to go deeper into these questions before proceeding to the Military Geography of countries lying outside the British Empire.

When an expeditionary force is sent out from an insular country, or from a country separated by water from a hostile country, the first thing a commander must consider is his base of operations on the enemy's territory, or as convenient as possible to that territory.

In oversea expeditions, a base of operations will mean a seaport. Such a point must be surprised. But it is usually defended, and the defenders are on the alert. Therefore, perhaps we shall have to throw a force ashore, on an open beach, form a temporary base (as was the case in the Crimean War, 1854),* push on from it, and gain possession of a better base by attacking a harbour on the land side. All this requires

* And, in the Russo-Japanese War, at Chemulpo, Pitzewo, and Takushan.

knowledge of the geography of the country. This base of operations must be secure from any enterprise on the part of the enemy; the routes must be known by which supplies may be sent along the line of communications of the fighting force; and posts must be established to secure these communications.

The nature of the country will teach us how our army should be composed.

The resources of the Theatre of War will have to be studied.

Artificial and natural frontiers must be known. Attention is drawn to the frontier of Natal as it existed before the South African War. People told us to hold Lang's Nek; but they only drew their conclusions from the map. The Buffalo River, which appeared a formidable obstacle, is sometimes quite dry—"dry as Piccadilly on a summer's day." No obstruction. The Drakensberg, too, was no obstacle. A force from Lang's Nek could have its line of communications cut from east or west.

European Frontiers.—Example of the weakness of a frontier: in 1870 the Palatinate flanked the French positions on the Saar and Moselle.

Disadvantages and advantages to both Germany and Russia in pre-war days as regards their frontier line: A Russian army could be in Breslau in four days, but would be threatened on its right flank from Königsberg, Danzig, Thorn and Posen.

In the case of Russia attacking Austria, and moving through Bessarabia and Roumania towards Buda-Pesth, it would have its right flank threatened.

The best illustration of strategical influence owing to geographical situation is Switzerland. She makes a salient between South Germany, Austria and Italy. If France were to invade South Germany, her movement would be flanked from Basle to Lake Constance; that is, if the Swiss were in alliance with Germany. If they were with the French, a German army moving by Breisach or Strasburg would be threatened on the left flank. And if France (the Swiss against her) were to invade North Italy, the left of a French army would be threatened throughout.

Mountains are usually regarded as specially favouring a defensive attitude; but they offer greater facilities to the attack. A range of mountains has to be watched for many miles. There are always several passes over it; and if pierced at any one point, the line of defence has to be abandoned.

If a mountain chain be an obstacle, it is also a screen ; and behind it a commander may concentrate his forces unobserved, and may effect a passage by outwitting his opponent, just as has been done often in the case of a broad river.

Alexander the Great crossed the Hindu Kush from south to north in 17 days, and from north to south in 10 days. Mahmud of Ghazni crossed the Suleiman range 12 times in 52 years, moving by the Gomal Valley and the Gwalari Pass to Dera Ismael Khan.

An example of the influence of mountains on strategy is the Sierra d'Estrella in the Peninsula Campaign. They separate the Valley of the Tagus from that of the Mondego ; and Wellington did not know by which of these two valleys Massena would try to reach Lisbon. Strategy was influenced by mountains in the campaign of 1866, in the Shenandoah Campaign (1862), in the Balkan Campaign (1877), the Afghan War (1880), the Carpathians' and the Italian Campaigns in 1916-17.

The lines of communication which connected Alexander's army with its ultimate base in Greece was through the defile of the Anti-Taurus, below the fortress of Sigma, where the Euphrates reaches its extreme western point.

Next to mountains, **rivers** govern strategy most.

(a) They become strategical frontiers when their principal passages are strongly held.

(b) They form a natural line of defence in front of a position or on its flank.

(c) They safeguard the flank of an army while in movement.

(d) They dictate the direction of a march. Example : the Nile, in Wolseley's expedition ; the Danube, in Osman Pasha's flank march from Widin to Plevna ; the Tigris and Euphrates in the Mesopotamian Campaign (1916-19).

Rivers as lines of operations : the Nile, the Mississippi, the Danube (1809), the Amur (1905) and the Niemen (1914).

Having landed his force, and before commencing active operations, the only thing which the military commander has to consider with regard to the political divisions of a country or state is to become acquainted with the exact manner in which these divisions are marked out, bounded, or separated by natural obstacles, " military " or otherwise.

Hamley lays it down that the essentials of a "military obstacle" are :—

- (a) It must present advantages for defence.
- (b) It must prevent a force from deploying while crossing it.
- (c) It limits the number of roads and ways which can be used.

When a military obstacle is on the frontier of a country, or perpendicular to the line of advance of an enemy into that country, it is of much greater importance than when it is situated in the heart of a country. Thus the Pyrenees are far more important than the Sierra Morena; the Pennine Alps than the Apennines. The two comparatively small rivers, the Drina and the Timok, forming the western and eastern boundaries of former Serbia, derive their importance only from the fact that they are natural obstacles on frontiers. When the river Oder marked the limits of Napoleon's power, it was more important than ever it has been, either before or since; and the little river Schumbi, in Albania, marked for centuries the dividing line between two great nationalities, just as did the small river Leitha, which divided the Austrian Empire into the Cis-Leithan and Trans-Leithan provinces. Millions who had never heard of the river Piave before the year 1917, became aware of its importance in that year; and the little stream of the Somme has now a greater and more historic name than the Amazon or the Hoang Ho.

In Europe, the two greatest boundary rivers have been the Rhine and the Danube; and although the latter is much greater, in length and volume, the former has played a much larger part in the history of Europe. And, as there is no doubt that it will play an important part in future wars, a thorough knowledge of it will be useful to the military student.

The Rhine

This is by far the most important military obstacle in Western Europe. At Strasburg it has a breadth of 260 yards; at Mainz, 480; at Coblenz, 400; at Cologne, 420; and where it enters Holland, north of the entrenched camp of Wesel, its breadth is 890 yards.

The following are the crossings in Alsace over the Rhine, all of which are now in the hands of the Allied troops of occupation :—

Huningue	Bridge of boats, 228 yards broad.
Huningue-Leopoldshöhe		Railway bridge.
Chalampè-Neuenburg	..	Bridge of boats, 210 yards broad. Also railway bridge, from Mulhausen to Mulheim.
Neu-Brisach	(strongly fortified)	A bridge of boats, 230 yards broad. A railway bridge with abutment piers strongly fortified.
Markolsheim to Sachbach		A bridge of boats, 228 yards broad.
Schœnau	Bridge of boats, 218 yards broad.
Rheinau	Bridge of boats, 260 yards broad.
Gerstheim	Bridge of boats, 290 yards broad.
Strasburg-Kohl (a very strong position, now in the possession of France).		Bridge of boats, and railway bridge, 270 yards broad. Bridge strongly fortified.
Selz	Bridge of boats, 320 yards broad.
Gamsheim, Drusenheim, Lauterburg.		Bridges of boats.

In the Bavarian Palatinate there are four crossings :—

- Maxau : bridge of boats, with rails laid for the passage of trains ; 390 yards broad.
 Gernersheim (fortified) : bridge of boats, and railway bridge, 315 yards broad.
 Spires : bridge of boats with rails laid, 370 yards.
 Mannheim : railway bridge, 325 yards.

In Hesse there are two crossings :—

- Worms : bridge of boats, 360 yards broad. Steam ferry-boats to take waggon across.
 Mainz (one of the strongest inland fortresses in the world) : bridge of boats, 560 yards broad. Railway bridge, strongly defended, 460 yards broad. Now occupied by French troops.

In Rhenish Prussia we have the following crossings :—

- Horheim : railway bridge, Lahn-Moselle railway.
 Coblenz (very strongly fortified) : bridge of boats, 370 yards broad. Fortified railway bridge.
 Obercassel-Bonn : large ferry-boats.

Cologne (strongly fortified): bridge of boats, 460 yards broad.
Fortified railway and road bridge.

Neuss-Hamm (fortified): fortified railway bridge. Old fort at Hamm, right bank.

Düsseldorf: bridge of boats, 430 yards broad; road and electric tramway bridge.

Duisburg to Harkort, near Rheinhausen: fortified railway bridge.

Ruhrort-Homberg: steam ferry-boats, for taking heavy waggons across.

Wesel (large entrenched camp in pre-war time): railway bridge, Hamburg-Venlo line, 2,150 yards broad, with bridge-head, Fort Blücher, on the left bank.

On the Dutch Frontier there is a floating bridge near Emmerich, to carry trains across the Rhine.

In the celebrated campaign of 1814, when Napoleon was standing at bay and facing all Europe, the operations of the Russian Generals, Wittgenstein and Wintzingerode, were completely stopped by a breaking-up of the ice on the Rhine: the former at Fort Louis, the latter at Düsseldorf. In the middle of January, Kleist's Corps, 15,000 strong, was preparing to cross from the right bank of the Rhine: infantry and artillery at Coblenz, cavalry at Neuwied. But the state of the river and its masses of breaking ice delayed the crossing for fifteen days. At the same time the Russian General, Tchernaiëff, too impatient to be held up by any obstacle, made his Cossacks swim across to the other side.

(The following paragraphs appeared in the first edition of this book, published in 1908:—

If we study the Franco-German frontier as a whole, and when we take into account the obstacles which exist, on the French side from Mezières to Belfort, and on the German side from Cologne to Basel, the first question we naturally ask ourselves is, Would it be possible or expedient for one of the two belligerents to turn the defences of his adversary?

This is an operation which would be scarcely possible except by violating the neutrality of Belgium or Switzerland. The results of such a violation would be so very serious that we can scarcely admit the possibility of such a thing. Nevertheless, the question has been discussed by German, Swiss and Belgian

military and political writers; the Germans taking the point of view that the aggression would come from the side of France.

But, far from wishing to strike a blow at the neutrality of Belgium or Switzerland, it is altogether to the interest of France that such neutrality should be defended and respected.

Looking at our maps, we see that the direct line between Paris and Berlin passes through Maubeuge, Namur, Liege and Cologne. For this reason, it has been said that this would be the direction of an offensive, on the part of France, or on the part of Germany; and also, it was to prevent such a movement that Belgium fortified Namur and Liege.

But an operation of this nature would be a very grave strategic error.

In old times, when Central Germany was covered with forests, and barbarians lived in the north of Germany, the legions of Germanicus crossed the Rhine near the present frontiers of Holland. In the same way, it was by the lower Rhine that Charlemagne attacked the Saxon Confederation. But since then the conditions of war have completely changed.

During the wars of the Revolution the French Armies of the Sambre and Meuse crossed the Rhine at Düsseldorf; but this they did for the purpose of *moving down easier in the direction of the rivers Lahn and Main*, to join hands with their Army of the Rhine, which was their principal army. Otherwise this movement has no result of any consequence.

Again, at the time of the invasion of France in 1814, that army of the Coalition which followed the northern route merely formed the right wing of an enormous force stretching from Hamburg to Genoa. Such a situation is not likely to be repeated.

And now we come to discuss the case of where Germany may think it advisable and expedient, from a strategic point of view, to violate the neutrality of Belgium. Belgium would certainly protest, and would do all in her power to resist the German invasion.

In the first place, Germany would be making a present of 200,000 men (size of the Belgian army, war footing) to her adversaries. She would have to overwhelm this army, and then pass on to the task of besieging or masking Liege and Namur. She would be obliged to weaken her forces on the Lorraine front by large detachments. She would find, in front of her, troops who would have had time to collect in sufficient numbers; and, even supposing she succeeded in getting through Belgium without serious opposition, she would find a strong artificial line of defence to break, in Dunkirk, Lille, Valenciennes and Mezières.

A German demonstration of force, made north of Cologne, would very probably have for its object the dispersion of the French forces, and the leading away of a large part of the French army from the battlefields of the Meurthe.

It would be a dangerous manœuvre on the part of France to despatch into the region of the Sambre-Meuse an army which would not be able, across the Eifel Hills, to establish any connection with the armies of Lorraine. But even admitting that this army succeeded in getting to the Rhine, and crossing this river at Düsseldorf, in what direction would it march then? As it would not be possible for it to move to the east without first covering its right flanks, the only thing left for it to do would be to move southwards and strike at the line of communications of the German forces in Lorraine. Indeed, in normal circumstances, a French army should not operate north of the Moselle except it has already gained considerable successes in Lorraine, or with the intention of forming a flank guard, in the Eifel district, to a successful French army moving from Lorraine on Mainz. But circumstances are never normal in war.

In case Germany intended to fight in Belgium she could make a very speedy concentration of her armies by the railway bridges of Cologne, Hamm, Rheinhausen, and Wesel, and the steam ferry-boats at Ruhrort; quickly getting into position between Aachen and Venlo. If, in addition to this, she were to seize the Belgian railways, she would be able to carry out a quick concentration on the north-eastern French frontier.

Four main lines in Germany would materially assist such a concentration. These are:—

(i) Hamburg-Wesel; (ii) Hanover to Duisburg; (iii) Hanover by Paderborn to Duisburg; (iv) Magdeburg to Düsseldorf.*

Not to mention the lines Leipzig-Cassel-Cologne, and the railways on both banks of the Rhine.

Below Liege it will be observed that the Meuse runs nearly from south to north. It does not form the German frontier; but it runs along close by the side of it; it is bordered with marshes, and may be looked upon as a trench covering the frontiers of Belgium and Holland.

A German attack on Belgium would be directed on the three points of Venlo, Maestricht and Liege.

Venlo is an old Dutch fortress, with a bridge-head of little value on the left bank of the Meuse. The railway line Hamburg-Wesel-Venlo on one side extends to Maestricht, on the other side crosses the Scheldt. Venlo stands at the eastern point of the arc which the Maas makes from Roermond to Grave,

* Exactly what was done by Germany in 1914.

turning the Peel marshes. On the left bank here, the country is very difficult for military operations, which makes the railway all the more important.

Maestricht was formerly considered one of the strongest fortresses in Europe. It was defended by two forts on the left bank of the Maas. Situated at the junction of several railways, it would be a good defence for Belgium against an attack from the east; but as the Dutch did not care to spend money for the defence of Belgium they have let the works go to ruin.

Liege is surrounded by strong forts; but a German army moving into Belgium would find it a hard nut to crack, and so might avoid it by taking the line St. Frond; therefore this latter place is now strongly fortified.

In case of an attack by Germany the Belgian army should take up a position behind the line of the Meuse. It could not expect to resist a German army for any length of time, even with its strong frontier fortresses; but forming the left wing of a French army, it should prove very useful.)

When the centre of gravity of German power lay in the Austrian Empire, Vienna was the strategic objective of the French campaigns against Germany.

But at the present time the centre of gravity has shifted further north; and the changes which have taken place on the right bank of the Rhine have placed a barrier between France and Austria. A war between France and Austria, without any other belligerents on each side, is now outside the range of probability.

But, for all that, there is no reason why the basin of the upper Danube—Ulm to Passau—this classic theatre of the wars of the Revolution and the Empire—should not become again the theatre of fresh military operations. Formerly, in order to march on Vienna, the French armies had to cross Bavaria. This country they could enter by three different routes: (i) on the south by Schaffhausen and the openings of the tributaries of the Upper Danube; (ii) on the west, by the defiles of the Black Forest; (iii) on the north-west, by the opening corresponding to the valleys of the Wornitz and the Altmühl rivers.

An army operating from Switzerland would be on the most favourable lines for an invasion of the Upper Danube. But this is no reason to assume that France, at the present moment, would gain much by violating the neutrality of Switzerland, with the object of turning the German defences on the Rhine.

Circumstances and conditions are not the same now as they were in 1800, when Moreau used Switzerland as a base.

Without going into the political consequences of a violation of the neutrality of Switzerland on the part of France, a French army, which had succeeded in passing the Rhine at Schaffhausen, and in getting into the basin of the Upper Danube, would still have to cross Germany in its longest direction and through its most difficult parts, to march on Leipzig and Berlin; and it would not reach these objectives by this route sooner than if it had moved by the Moselle or Meuse.

The only way that such a movement against Germany would be of great effect would be in the very improbable case of a junction between an allied Franco-Austrian army against Germany.

In 1805, Napoleon looked upon the possession of Ulm as indispensable to the organisation of his forces in the basin of the Danube; as Ulm was necessary to guard the French base of operations and to secure their communications with the Rhine.

But in these days it is altogether different. The fortifications of Ulm have been greatly increased. The town, situated on the left (north) bank of the Danube, belongs to Wurtemberg; it has a Wurtemberg garrison, and, before the war, had a Prussian Governor. On the right bank of the river, New Ulm belongs to Bavaria. It would seem as if in strengthening Ulm, Prussia's idea had been to secure a strong place in the very middle of South Germany.

In 1866, and even in 1870, Bavaria was by no means friendly with Prussia. If Bavaria, the second largest State of the German Empire, wished to act independently of the Prussian yoke, and had the inclination to join Austria, Prussia, by holding the position of Ulm, would have been able to paralyse all liberty of action on the part of the Bavarian army.

The keys of the Upper Danube are Ratisbon on the east and Ulm on the west. Ratisbon, called by the Germans Regensburg, is at the northern angle of the elbow of the Danube; equally distant from Strasburg and Vienna, 200 miles; in a most important strategic situation with regard to the debouches from Bohemia; and it commands the communications between Bohemia and Bavaria.

After the war of 1870-71, the Bavarians wished to make of Ratisbon a strong central fortress. Prussia opposed this idea. At that time the King of Bavaria was a whimsical lunatic who spent the revenues of his country in building useless castles, supporting extravagant musicians, and keeping expensive

favourites. Prussia thought that a Bavarian fortress such as Ratisbon would have been, quite close to the Austrian frontier, might easily get into Austrian hands, and be used as a base, with Bohemia, of a war of *revanche* against Prussia. So Prussia persuaded the mad king that Ingolstadt would suit him better. Ingolstadt was then made a very strong place. Both sides of the Danube were strongly fortified; and this place can be used to defend the defiles north of the Danube, the valleys of the Wornitz and the Altmühl. The principal railways from North Germany communicate by it with the great arsenal of Augsburg. Beyond this, Ingolstadt has neither strategical nor political value.

Up to 1870, the defence of Central Germany rested on the fortresses of Minden and Erfurt. The former commanded the gates of Westphalia; the latter the gates of Thuringia. But these places are no longer of any strategical importance; and their works, together with those of Wittenberg, have been demolished.

The mountainous country between the Rhine and the Elbe, to the north of the Main, is easy to defend. The lines of invasion, from the west, turn it, to the north by Wesel, Hanover and Brunswick; and, to the south, by the valley of the Main.

A German army, placed in the centre, that is to say, on the line Frankfort-Kassel-Magdeburg, would be in a most favourable position to manœuvre on the flanks of an enemy who tried to follow out the lines just mentioned, or to strike him in front if he advanced between these lines.

The valley of the Main is the grand route which armies have used coming from the west to the centre of Germany. Looking at the map, we can see that it leads up to the gap between the Erz-Gebirge and the Böhmer-Wald. But this gap, leading from the valley of the Main to that of the Elbe, is held by the strong place of Eger, just as the gap between the Vosges and Jura is held by Belfort.

Of all places, the strong position of Mainz, on the most eastern elbow of the Rhine, is the place to make a base of operations in a campaign against Germany. The Germans knew this; that is why they made it one of the strongest fortresses in the world; and that is also why Napoleon III., in 1866, wanted to get it as the price of his neutrality during the Prusso-Austrian War.

Mainz commands three great lines of attack :—

- i. The route of the Neckar which, by the Jaxt and Kocher, leads to the basin of the Danube.
- ii. The route of the Main which leads to the Frankenwald, Jena and Leipzig ; that is, into the very heart of Germany.
- iii. The routes of the Kinzig and the Nidda, leading to Cassel, or to the gates of Thuringia, at Erfurt.

From Lake Constance (which the Germans call *Boden See*), in the north-east corner of Switzerland, the frontier between Bavaria and Austria runs east, crossing the Lech stream at the little fort of Füssen, the head waters of the Isar at Mittenwald, and the Inn at Kufstein. Then, just before it gets to Salzburg, the frontier line goes north ; and, bending to the east, strikes the Danube at Passau. From here eastwards for 15 miles, the northern, or left, bank of the Danube is Bavarian, and the south Austrian. There are some antiquated defence works at Passau, but the place is not of much military importance. At Salnau, near the head waters of the Moldau (branch of the Elbe), the frontier of Czecho-Slovakia begins, and runs north-west to the gap of Eger. Here the boundary begins between Czecho-Slovakia and Saxony ; runs north-east, then east to Gablonz, where the Silesian boundary begins ; then south-east, and bending round to the north-east, follows the course of the Upper Vistula to the little frontier town of Myslowitz. Prague (on the Moldau), the capital of Czecho-Slovakia, is situated at equal distances (110 miles) from Ratisbon (the most northern town on the Danube), Olmutz, the capital of Moravia, and Breslau (on the Oder), the capital of Silesia. Myslowitz is an important railway junction, from which lines radiate in all directions, into Poland, Germany, Galicia and Czecho-Slovakia.

On the west of the Elbe, Saxony includes the greater part of the basin of the Saale, which in former times has been the theatre of important military operations.

The branches of the Saale, on the right, lead into Bohemia ; on the left, into the Thuringian Forest. Its basin, one of the richest of Germany, now covered by a network of railways, has been the scene of many great battles ; among others, Rossbach, Jena, Leipzig and Lutzen.

Leipzig and Dresden are the points of convergence of a good many roads and railways.

An army which had taken up a position in the basin of the Saale would isolate Prussia from Bavaria and from the valley of the Main. It is here, and not in Bohemia, that Austria, the ally of Saxony and Bavaria, should have taken up a position at the outbreak of the war of 1866. By doing this she would have covered Frankfort and Munich; and if the Prussians had attempted to move on Vienna, the Austrians could have cut their line of communications and threatened Berlin.

SILESIA is an interesting country, from a military point of view. For Upper Silesia would be the zone of concentration of armies which, coming from the north, would try to penetrate into the basin of the Danube through the opening of the Oder, into Galicia by the valley of the Vistula, or into Bohemia and Central Europe by Glatz. It is a very rich country, in agriculture, mines and commercial industries. Breslau would form the principal base for military operations; but it is a place without defences. It is the geographical centre of the great depression of Silesia between the Sudetic Mountains and the high wooded districts of Poland. And to this central point converge the main lines of communication of Bohemia, Moravia, Galicia and Poland. Also the communications which unite Eastern with Western Europe pass through this point; they have been the natural routes followed by the migration of nations, and by ancient and modern armies. The old redoubts round Gorlitz still retain the name, "The tombs of the Huns"; and near Breslau is a famous battlefield, called the "Field of the Huns." In the year 1211, the Mongols invaded Central Europe in two huge bodies; the first crossed the Carpathians into Hungary; the second followed the route Cracow-Breslau, beat the Germans at Liegnitz, and joined the main army by moving down the defiles of the Oder.

To form a correct picture in his mind of any particular country the student should teach himself how to draw a map of it. This will not be found difficult after a little practice; and in order to give some idea of how it should be done, it is hoped that the following hints will be found useful:—

To draw a military and historical map of *Central Europe*: Draw a horizontal line, 6 inches long. Beginning at the left end of this, mark a point $\frac{1}{2}$ inch to the right; another point 1 inch on the right of this; and then 3 inches again on the

right. The first of these points locates Prague, the capital of Czecho-Slovakia ; a city celebrated in the Thirty Years' War and in the Wars of Frederick the Great. The second point marks Königgrätz, scene of the overthrow of the Austrian military power, on July 4, 1866. The next point gives Cracow, capital of the ancient Kingdom of Poland, with the wonderful salt mines of Wieliczka close by. The end of our line on the right gives us the river Wysloka, a tributary of the Vistula, behind the line of which Mackensen concentrated his forces in 1915, before sweeping across Galicia like an avalanche. The whole line is 360 miles long ; therefore the inch on it represents about 60 miles. If it be continued for an inch, or 60 miles, to the west, we come to the important position of Eger, the gap which leads from the valley of the Main into that of the Upper Elbe.

The first line of defence in Czecho-Slovakia and Poland, west of Prague, would be Cracow, Przemyśl,* Lemberg and Brody. From Cracow to Radomysl, the Vistula formed the old boundary between Austria and Russia. From Cracow set off a line $5\frac{1}{4}$ inches long, making an angle of 45° with the Cracow-Prague line, and below it. At $2\frac{1}{2}$ inches on this is PRESBURG, just east of where the March falls into the Danube ; at $3\frac{1}{2}$ inches is GRATZ, the capital of Styria ; at $4\frac{1}{2}$ inches KLAGENFURT, capital of Carinthia ; and at $5\frac{1}{4}$ inches is the junction of Austrian and Italian territory at the most northern point of the Adriatic. From this point draw a line $6\frac{1}{2}$ inches long, parallel to the Prague-Cracow line. At $\frac{1}{4}$ inch is TRIESTE, formerly the principal seaport of Austria ; at $1\frac{1}{2}$ inches is AGRAM, capital of Croatia, on the Save ; at $3\frac{1}{4}$ inches is the celebrated battlefield of MOHACS, on the Danube ; and at the end of the line, $6\frac{1}{2}$ inches, we get HERMANNSTADT, commanding the middle passage (ROTHERTHURM Pass) over the Transylvanian Alps, with the VULCAN Pass on the west and TOMAS Pass on the east ; all three leading from Austro-Hungary into Roumania. From the western end of the $6\frac{1}{2}$ -inch line erect a perpendicular 4 inches long. Its lower end will be at RAGUSA, the principal seaport in the south of Dalmatia ; at $\frac{3}{4}$ inch is FIUME, and at $1\frac{3}{4}$ inch is ZARA, the capital of Dalmatia. Join RAGUSA to CRACOW ; at $1\frac{1}{4}$ inches is BOSNA SERAI, or Serajevo, the capital of Bosnia, and the scene of the brutal assassination of Archduke Ferdinand, June 1914 ;

* The proper pronounciation of this name is *Per-em-uzl*. The inhabitants of the place use this pronounciation ; and in the old Latin histories of Poland it is always written *Peremuslus*.

from $2\frac{1}{2}$ inches to $4\frac{1}{2}$ inches is the north-and-south reach of the Middle Danube; at $2\frac{1}{2}$ inches is ESSEK, on the Drave, the capital of Slavonia; and at $4\frac{1}{2}$ inches is BUDA-PESTH. At $5\frac{3}{4}$ inches the line crosses the Carpathians west of the Lomnitzer Spitze. From Cracow draw a 6-inch line at an angle of 25° with the Prague-Cracow line towards the south-west. At $1\frac{1}{2}$ inches on this line is the strong fortress of OLMUTZ; at 2 inches is BRUNN, the capital of Moravia. The point at $3\frac{1}{2}$ inches is LINZ, on the Danube. At $4\frac{1}{4}$ inches the line very nearly touches the Bavarian frontier at SALZBURG; at $5\frac{1}{4}$ inches is INNSBRUCK, capital of the Tyrol; and the end of this line is on the frontier where the river Inn issues from Switzerland, north of the Ortler Spitz and the source of the Adige. A 5-inch line, representing 300 miles, drawn nearly north-west at Buda-Pesth making an angle of 50° with the horizontal, will pass over the celebrated battlefields of AUSTERLITZ and KOLIN, and will end at the defile by which the river Elbe leaves Austria and passes into Saxony, commanded on the German side by the strong fortress of KONIGSTEIN. The production of this line to the south-east passes through ORSOVA where the Danube leaves Austria by the Iron Gates; and it also passes through the important railway centre of TEMESVAR. CZERNOWITZ, the capital of Bukovina, on the Pruth, is in the same latitude as Linz, and nearly due south of BRODY. The head waters of the three rivers, Dniester, Pruth and Sereth, are in the north-east of the Carpathians in Galicia. The strongest fortress on the Danube in Austro-Hungary is KOMORN, about half-way on a line joining PRESBURG and BUDA-PESTH. The military centres and headquarters of the Austrian Army Corps were VIENNA, BUDA-PESTH, PRAGUE, CRACOW, PRESBURG, INNSBRUCK, SERAJEVO (or Bosna-Serai), HERMANNSTADT, AGRAM, TEMESVAR, GRATZ, KASCHAU (north-east of Buda-Pesth), PRZEMYSL, JOSEPHSTADT and LEMBERG. The station of the Austrian navy was POLA, south of TRIESTE; if a horizontal line 4 inches long be drawn from POLA eastwards, it will pass through the south of Croatia, the north of Bosnia and end at BELGRADE, now the capital of Jugo-Slavia, at the junction of the Save and Danube. The LEITHA falls into the Danube below PRESBURG, and forms part of the boundary between Austria and Hungary, as the MARCH does on the north of the Danube. The Oder and Vistula rise in the mountains of Silesia.

Mapping

No map will be complete unless the direction of the North Point and the scale of the map are clearly shown. By the "scale" is meant a straight line, divided into parts which, on the map, represent actual distances on the ground. This scale may be represented in either of two ways: (i) by the "representative fraction," as $\frac{1}{63360}$, which means that 1 inch on the map represents 63,360 inches, or one mile, on the ground; or (ii) we may express it by saying that the scale of the map is an inch to the mile. A representative fraction is one whose *numerator is always unity*, and whose denominator is a certain number of units each one of which is the same as the numerator. For instance, if the numerator is an inch, you cannot have feet or yards in the denominator, and so forth.

Maps are copied by means of squares, or rectangles; the former for preference. The copying is done in this way: Cover the original map with squares of a convenient size; then prepare the paper for the copy with the *same number* of squares. Number the squares upwards, beginning from the left-hand bottom corner: 0, 1, 2, 3, and so on; and in the same way along the lower edge of your paper, 0, 1, 2, 3, from left to right. Then carefully copy the original map by eye: first filling in the railways, roads, rivers, mountains, marshes and forests, and the other details. All your printing of names and features should be horizontal; that is, on imaginary lines parallel to the top or bottom of your paper. But the directions of roads, railways and rivers should be written along, and close above, the lines representing such features. Marshes are represented by small, thin, horizontal lines (generally in blue) with short black lines perpendicular to them. Forests are shown by perpendicular lines, or by a small sketch of a policeman's baton, with lines drawn to the right, from their feet, as shadows falling horizontally.

If it is required to copy a map to exactly twice its size, you proceed as follows: Take the length of the original map, in inches, and multiply the number of inches by the square root of 2, which is 1.414. This will give you what is to be the length of your copy. Now do the same with the breadth of your map. Then divide the length of the original map into any number of equal parts, and the length of your copy into the same number. Do the same thing with the breadth of the map and the copy. Having now made the frame-work for your copy, in this way,

fill in the details by eye, carefully following the original. If your copy is to be *half* the size of the map, you multiply by $\frac{1}{1.414}$ or 0.707, instead of multiplying, as above, by the square root of 2. If your copy is to be three times the size of the original, you multiply by the square root of 3, which is 1.732; and for one-third the size, by $\frac{1}{1.732}$ or 0.577; and so on.

To draw a map of **North Central Europe**, or what was formerly the German Empire, the following directions will be found helpful:—

Draw a line 6 inches long, from nearly north-west to south-east, making an angle of 40° with a north-and-south line. Bisect this line, and through its middle point draw a perpendicular to it, $4\frac{3}{4}$ inches on the right, and $4\frac{3}{4}$ inches on the left, $9\frac{1}{2}$ inches altogether. These two lines bisect each other at **BERLIN**. The top of the first line marks the most northern point of Schleswig. Call it A. The lowest point of the line marks where the Austrian river March rises south of the Adler Gebirge (that small range which joins the Riesen-Gebirge and the Sudetic Mountains) 30 miles south of the important fortress of Glatz. Call this B. At the north-eastern end of the longer line we find **MEMEL**, and at its south-western end **METZ**. The line from A to B represents 520 miles; and that from Memel to Metz, 800 miles. Make a line drawn direct south from A $6\frac{3}{4}$ inches long; its most southern point, C, will mark where the boundaries of Wurtemberg and Bavaria meet on the northern shore of Lake Constance (Boden See). Join this point C to Metz, and a little more than half-way from C, on the joining line, gives us **STRASBURG**. Divide AC into four equal parts: the point marking the first division from A gives the strong fortress of **STADE**, defending **HAMBURG**, at the mouth of the Elbe. The second point is 20 miles north-west of **GOTTINGEN**; the third is west of **WURZBURG**. A line drawn from A to Metz passes through **WILHELMSHAVEN**, direct west of **STADE**; it also cuts the Rhine at **COLOGNE**, and passes a little east of **THIONVILLE** (Diedenhofen). Join the point B to Memel. Half-way on the joining line we come to the point where the **VISTULA** leaves Poland to enter Prussia, and the important strategical position and railway centre of **THORN**. A line 8 inches long, drawn from Thorn, parallel to the Metz-Berlin-Memel line, will end just at the gap of **BELFORT**, after passing near **POSEN**, **DRESDEN** and **STUTTGART**. Dresden is

112 miles south of Berlin. A line joining Cologne to Berlin passes through MAGDEBURG, a first-class fortress on the middle Elbe, at equal distances from Dresden and Hamburg. KIEL is 55 miles north of Hamburg; and, taking Kiel as a centre, and a line $4\frac{1}{4}$ inches as radius, we get DANZIG (a first-class fortress at the mouth of the Oder) direct east at the end of the line; and the same distance, $4\frac{1}{4}$ inches south by west, gives us MANNHEIM, at the junction of the Rhine and the Neckar. If the line through Danzig be produced 1 inch further to the east, we get the celebrated battlefield of EYLAU (February 8, 1807) about 20 miles south by east from KÖNIGSBERG. An equilateral triangle, each side 210 miles long, will have Cologne, Hamburg and JENA (October 14, 1806) at its angular points; Jena being almost direct east of Cologne.

For the boundary: Begin $\frac{1}{2}$ inch south of Dresden, and go south-west for $1\frac{1}{4}$ inches along the Erz-Gebirge; then south-east for a little over $1\frac{1}{4}$ inches to meet the Danube 16 miles east of Passau. Below the Danube the boundary between Germany and Austria is formed by the rivers Inn and Salzach, as far as a point on the map 2 inches west of C; then follows the Rhine westwards to Belfort. From here it formerly ran nearly north for $\frac{7}{8}$ inch by the crest of the VOSGES until it gets to MT. DINAN, west of Strasburg, when it turns north-west again for $\frac{7}{8}$ inch, crossing the Moselle 12 miles south of Metz, then bending round to the north-east past Thionville, touches the line A-Metz at Treves, and so on, following the boundary as shown on the map. The positions holding the Vistula as a line of defence are Danzig, Graudenz, Bromberg and Thorn. The line of the Oder is held by Stettin (with Swinemunde), Kustrin, Glogau and Breslau. The strong positions on the line of the Elbe are Stade (and Cuxhaven at the entrance), Magdeburg, Torgau and Konigstein. Those on the Rhine are Wesel, Düsseldorf (defending Krupp's ironworks at Essen), Cologne, Coblenz, Mainz, Mannheim, Strasburg (with Kehl), and Brisach. In front of this line of the Rhine we have Thionville, Metz, Saverne (or Zabern), Colmar and Mulhausen. South of the Danube are the lines of the rivers Iller (joining the Danube at Ulm), Lech (with the huge arsenal of Augsburg), Isar (with MUNICH, the capital of Bavaria), and Inn (flowing past Innsbruck, capital of the Tyrol, and joining the Danube at Passau). The great fortress of Ulm is the key of the Upper Danube; and going down the Danube from here, the most important strategical positions are Ingolstadt and Ratisbon.

Austria.—Notwithstanding the outward signs of harmony between the former Imperial families of Austria and Germany, the fact is that no very deep sentiment of love has ever existed between the Germans of the Danube and those on the Spree; and their rivalry and ambition had often made them turn their arms against each other, to the delight of their enemies, even since the time of Frederick the Great. The Hungarians have always cordially hated the Prussians; though (for political reasons) they fired over the heads of the Prussian infantry at the battles of Nachod and Skalitz (1866). In this campaign, called the “Seven Weeks’ War,” the object of Prussia was to gain, and of Austria to hold, a predominating influence and supremacy in Germany; and it was generally looked upon as only a family quarrel.

Then the Prussian victories in 1870 consoled the Austrians to some extent, and flattered their vanity as Germans. So that Austria concluded a treaty with Germany, by which each was bound to assist the other if attacked at the same time by two hostile powers. And in all questions of general European interest, Austria had to conform to the policy of the Berlin statesmen.

The Austrian alliance made it much easier for Germany to carry out any schemes she might cherish with regard to the Balkan Peninsula, the Ottoman Empire and the Near East.

Owing to this alliance, Austria did not think it necessary to fortify the Bohemian frontiers. Neither did Germany; but the latter kept up a few old fortresses; for example: Königstein, near Pirna, commanding the defile of the Elbe; Torgau, on the Elbe, and Glogau on the Oder. Glogau is still kept in a good state of defence, on account of its proximity to the Polish and Russian frontiers. Neisse was also fortified; but the defensive works of Glatz have been dismantled, though it would not take long to put them in a state of defence again.

A network of strategic railways has taken the place of these frontier fortresses on the side of Germany; and these railways are arranged in such a manner as to enable Germany to concentrate troops rapidly at any point whatever along the Czecho-Slovakian frontier. At the same time the main double line of Hof-Chemnitz-Dresden-Görlitz-Liegnitz-Breslau-Mysłowitz, which runs along the foot of the Erz-Gebirge and the Riesen-Gebirge, would considerably facilitate lateral movements from the frontiers of Bavaria to Poland.

This line is joined up with the railway not only to Odessa but also to Constantinople.

At the Congress of Vienna, in 1815, as a bribe to Russia for consenting to the splitting up of Saxony, the Czar was given the greater part of the Grand Duchy of Warsaw, which had been founded by Napoleon. Also the Congress took from Prussia a slice of Poland which had been given to the former in the partition of 1795. This is why the frontier between Prussia and Poland had in pre-war days, the shape of an S turned the wrong way about; and in certain places it approached a point about 180 miles from Berlin. Now this was an unpleasant situation, which Prussia had naturally a desire to change; and a change has been effected, though not quite along the lines she hoped for, by the Treaty of Versailles.

[The following paragraphs appeared, as they are given here, in the first edition (1908) of this book :—

It has been said that this double re-entrant of Poland pushing into Prussia, as Switzerland pushes into Austria, constitutes a danger for Germany. But such an opinion is not at all justified. It is, in this case, Germany which has all the strategic advantage of converging lines of operation; whilst the Russian armies, if we suppose them concentrated in the district of Warsaw, would be obliged to face attacks coming from the north, the west and the south-west.

The great disadvantage of such a situation would be considerably increased for the Russians by the insufficiency of their railways in these parts, particularly if we compare them with that network of railways so scientifically arranged along the German side of the frontier. It would be something like the comparison between the French and German railways in 1870.

And if we take into account a very probable combination of Austria and Germany against Russia, it would, in this case, be very difficult for Russia to carry out successful strategic concentration on the left bank of the Vistula.

THE FRONTIER BETWEEN RUSSIA AND PRUSSIA begins from the little town of Nimmersatt, north of Memel; crosses the Niemen below Jurborg; cuts the S. Petersburg railway between Eydtkuhnen (in Prussia) and Wierzbolow (in Russia), runs across the marshes of the Mazovie, and the upper valleys of

the tributaries of the Narev ; crosses the Oukra near Soldau, follows part of the course of the Drewenz, cuts the Vistula above Thorn, runs along the swamps of Goplo and Powidz, cuts the Wartha near where it is joined by the Prosna, following the course of this river to a point 50 miles east of Breslau, turns south-eastwards from it at Landsberg, striking the Austrian frontier at Myslowitz. It is altogether about 690 miles in length.

In Prussia East, the frontier is protected by the marshes of Masurenland (Mazowie) ; between the Vistula and the Wartha, the lakes of Goplo and Powidz, with other smaller ones, form an extended obstacle. More to the south the frontier is protected by huge marshy forests. On this frontier the land is generally flat, marshy or sandy. Therefore the movements of armies here would be limited to roads ; and as the material for making good roads is not to be found here, the communications are very bad. The secondary roads become absolutely useless in the rainy season ; and military operations are only possible in times of great drought or severe frost. It is for this reason that railways are of such great importance along the Prusso-Polish frontier.*]

After the Franco-German War of 1870-71, and again after the formation of the Franco-Russian Alliance, Germany spared no pains to strengthen her eastern frontier. Huge works were constructed about Königsberg, Thorn and Posen, which formed the principal points of the system of defence. The railways which join these places indicate the strategic front which the German armies would take up in case of a war with Russia. Indeed these three places may be compared, from a strategical point of view, with Strasburg, Mainz and Cologne on the western frontier of Germany.

KÖNIGSBERG is situated near where the river Pregel empties itself into the Frisches-Haff. It consists of an enceinte, recently strengthened, and surrounded by thirteen forts of the very latest pattern. The fortress may be looked upon as the defence of Samland, a broken and wooded peninsula, of which the coast is steep and inaccessible ; bounded on the north by the Kurisches-Haff, and, on the south, by the Pregel ; while the Dieme canal, running from Tapiau to Labiau, protects it on the east.

* It will be found interesting to compare this forecast with what actually did take place in 1914-17, and also to compare the present eastern frontiers of Prussia with her pre-war frontiers.

The fortress of Pillau, west of Königsberg, defends the entrance to the Frisches-Haff. To the north, the entrance to the Kurisches-Haff is defended by very powerful works, but Memel itself is not fortified.

There are some fortifications at Labiau and Wehlau; so that the peninsula of Samland would be a district very difficult to attack; also a small force placed there would be sufficient to draw away a large body of any army of invasion coming into Prussia from the north-east.

THORN is in a most important strategic position on the Vistula. It is the bridge-head which would enable an army to manœuvre on either bank of the river, and its tactical situation is no less advantageous. There are three large detached outworks on the left bank, and five on the right.*

POSEN is the position which commands the eastern frontier of Prussia. Its defences consist of four strong forts on the right bank of the Wartha and five forts on the left. The river is here about 110 yards broad. The investment of the place would be rendered difficult by the marshes of the Netze.*

A German army detailed to operate between the Vistula and the Wartha would rest its left on Thorn and its right on Posen. The four strong places, Königsberg, Thorn, Posen and Danzig, formed the Prussian "Quadrilateral," which was to threaten the right flank of an advance against Prussia from the east, through Poland. And of this quadrilateral, Glogau, on the Oder, may be looked upon as an advanced outpost.

Danzig is a first-rate fortress. It can be partly defended by inundations from the estuary of the Vistula. It is connected with the strong naval fortresses of Weichselmunde and Newfahrwasser. In addition to this, five forts are built on the left bank of the Vistula, and three on the right bank. The most important railway from Danzig runs down south by east, crosses the Vistula at Dirschau, and the Nogat at Marienburg. The delta of the Vistula here is called Das Werder; and is crossed by the railway from Berlin to Königsberg. The branch of the Vistula on which Danzig is situated, is called the Mottlau.

Germany did not consider it necessary to go to the expense of fortifying Graudenz; but at the same time the old fortifications were improved so as to make a good bridge-head at this place.

Behind, that is to the west of, the line of the Vistula, we come

* Thorn and Posen are now in Polish territory.

to the Oder, the second line of defence of Germany on the east. The marshy valleys of this basin form a considerable obstacle, which is further strengthened by the fortresses of Glogau, Küstrin and Stettin. As it is very improbable that any attack coming from the east would have Stettin for an objective, the fortifications of Stettin are dismantled, with the exception of those in the direction of the sea, which have been considerably strengthened. Between the mouths of the Oder and Vistula are the three naval forts, Kolberg (at the mouth of the Persante River), Rugenwalde (at the mouth of the Wipper), and Stolpe-munde (at the mouth of the Stolpa). The estuaries of these little rivers might form easy points of disembarkation; that is why they are fortified. The canal which runs from Stettin, out to its port, Swinemunde, is 500 yards broad, and 7 or 8 fathoms deep; the water in the harbour is 30 feet deep.

KÜSTRIN occupies a most important situation, at the junction of the Oder and Wartha. The valleys of these two rivers are broad and marshy, and their passage is difficult. Küstrin is surrounded by a belt of detached forts.

Glogau is an old fortress, of which the fortifications date since the time of Frederick the Great. It has a bridge-head across the river, capable of making a strong resistance. This fortress is the only defence of the line of the upper Oder. Yet it is in this part of its course, nearest to the frontiers of Poland, that the Oder is easiest to cross. On account of the new lines of railway from Warsaw to Kalisch, and from Ivangorod to Silesia, this part of Prussia is more threatened than it was before; and, before the war, Prussia was thinking it advisable to build another fortress and bridge-head higher up the river, probably at Kosel or Ratibor.

During the Great War, the only part of German territory in Europe in which fighting took place was in the eastern parts of Prussia. A certain amount of irregular fighting is still going on there (1921); and there is no reason to doubt that a good deal of fighting will take place in these parts in the future. Therefore it is well to be acquainted with the Military Geography of this part of Europe, and to study the defensive measures taken by Germany, before the war, for the protection of her frontier in this direction. We see that it was well organised, either for the offensive or the defensive.

As a base of operations, it was provided with hospitals,

magazines, arsenals and railways. In the case of a reverse, a retreating German army could utilise the Oder with its strong places, as second line of defence. The most vulnerable part of it is the upper Oder; but then, by looking at the map we can see that the advance of a Russian army in this direction would be a very dangerous operation, on account of the quadrilateral of Königsberg, Thorn, Posen, Danzig.

The best method for defending a State is to carry the war into the neighbouring hostile State. Germany is well aware of this. And therefore when war broke out between Germany and Russia, the first move Germany made was to dash down from the quadrilateral and seize the line of the Vistula. In the year 1887 the tension between the two empires had nearly reached breaking-point; and the troops in Danzig and Königsberg were kept fully equipped and ready, on one occasion for 48 hours, during which time they were not permitted to undress or even take off their boots. Long lines of trains stood ready at the railway stations, with steam up. And if one word had flashed from Berlin, 140,000 German soldiers would have been under the walls of Warsaw in 20 hours.

The military organisation of Germany, the development of her strategic railway lines, and the splendid state of preparation in which she kept her strong places along the Russian frontier, enabled her to carry out the mobilisation of her forces with a completeness and rapidity which could not possibly be equalled by the Russian army. And it is to this high state of preparedness that Germany in a great measure owed the successes of the two campaigns of 1866 and 1870; but when she began to believe that no other Power could attain an equal state of efficiency, she made the greatest mistake in her history.

BERLIN, the capital, is not defended by any fortress in its vicinity; because the fortress of Spandau by itself is useless, and plays no part on the strategical chess-board. But, to an attack coming from the west, the capital can oppose the strong line of the Elbe from Königstein to Stade. Magdeburg plays the same part on the west that Küstrin does on the east, with regard to the defence of Berlin. The only open advance on Berlin is from the south. But then the railway lines which converge on Berlin from the south and south-west, Dresden-Berlin, Halle-Berlin, Cassel-Berlin, as well as the double line already referred to, from Hof to Myslowitz, would enable

Germany to place an armed force at any threatened point south of Berlin, between the strong lines of the Elbe and Oder. An attack from the north is altogether out of the question, owing to the difficulties of effecting a landing at any convenient place on the Prussian shores of the Baltic Sea.

Besides, even if Berlin were taken by a foreign invader its loss to Germany would not mean so much as the loss of London to England, the loss of Paris to the French, or the loss of Constantinople to Turkey.

When Frederick the Great was defeated by the Russians at the terrible battle of Kunersdorf, and the way to Berlin was open to the Russians, the Prussian King took no trouble to defend his capital. He sent a short note to the Governor of the city, saying, "Let the royal family leave Berlin; send the archives to Potsdam; and let the town make the best terms it can with the enemy." And in 1806, when the French had taken Berlin, what was left of the Prussian army still went on fighting, and the loss of the capital had no appreciable effect on subsequent military operations.

But at the end of the Great War, there was no holding out against the victorious soldiers of Great Britain, France and America; the German resistance collapsed like a wet blanket; and, as Kouropatkin sardonically remarked in his report on Liaoyang, "the leaders showed an unnecessary anxiety to retire."

The most striking political result of the war is the disappearance of Germany's Colonial Empire; and the short history of this empire is a proof that colonies cannot be made to order; that the making of a colony is a work of nature, not of art; that the raising of a new regiment and a new colony are two different things altogether. The German colonies have been divided among the allies, as mandatories under the League of Nations; and the refusal of the Peace Conference to return them to Germany was not one of the decisions which were most loudly challenged by the enemy. The German navy was built to protect the German colonies and the German overseas trade. How utterly it failed to maintain communications with the one or to retain the other is a commonplace of the war; and the failure cannot be without effect on the future trend of German policy. The distribution of the German colonies followed the *fait accompli* of conquest. In the Pacific, Samoa

was assigned to New Zealand, German New Guinea to Australia. In Africa the problem was more complex ; because France, Belgium and Portugal all co-operated in the far more prolonged and serious military operations against German overseas power, and each ally could put forward peculiar claims to share in the spoils : France, not only on account of the proverbial gallantry of her troops in the Kameroons, but also in view of the extraordinary success of her new colonial possessions in North Africa ; Belgium, by reason of having borne the brunt of the first German rush in Europe, and on account of assistance rendered in the East African Campaigns ; and Portugal, in virtue of her historic record as the oldest colonial power in Africa. German South-West Africa, which had been conquered in 1914-15 by the Union of South Africa, has been assigned to the Union without qualification. Togoland* and the Kameroons are divided between France and England ; France, on the whole, gaining the advantage in the division, an advantage which nobody in the British Empire will be prepared to criticise. In East Africa, potentially the most valuable of the German colonies, considerable territories have been assigned to Belgium and Portugal. The remainder will accrue to Great Britain ; the precise boundaries are not yet defined, and the rectification of frontiers will necessarily take some time.

* This was the only German colony that paid for its upkeep.

CHAPTER IV

THE HIGH LANDS OF EUROPE

Switzerland and the Balkans.

The Military Geography of Switzerland deserves special study ; and there is no other country in Europe in which the political and commercial geography, as well as the history of the country, are so closely connected with its Military Geography.

During the Great War, Switzerland was forced to undergo, in everything but the actual miseries of invasion, as costly a part in the great tragedy as the chief participators in the struggle. With but a few millions of people inhabiting her mountains and valleys, the Swiss Republic mobilised an army of 300,000 men. The expense of this is not all that her neutrality cost the Republic ; for her principal source of national revenue, the summer and winter tourist season, had failed her. Whatever compensation she had been gaining by the contraband industry, which for some time fed South Germany, was stopped by the Italian union with the Allies. For some time after the opening of the war, Switzerland did a very flourishing business in supplying Austria and Germany, through the convenient port of Genoa. This port was for the Central Powers as advantageous as the British ports of New Providence and Nassau (Bahamas) were to the Confederates during the American Civil War (1861-65). Until Italy threw in her destinies with France, Great Britain and Russia, the Swiss were not inclined to look upon the war as anything particularly unpleasant ; but then they honestly believed that their country was about to meet the horrors and misfortunes which struck Belgium in the beginning of the war. It was reported, and published in some Swiss newspapers, that the Kaiser had taken his place at the head of a Teutonic army specially formed for the invasion of Italy from the west and north. This roused the Swiss to a fever of anticipation ; for the passing over their splendid highways constructed during the

last half century would render the proposed operation as easy as the rush through Belgium.

Strategically, Switzerland is the key of both France and Italy to any enemy from northern or central Europe. And it is not likely that the Swiss have forgotten how, in 1814, the Austrians, in their eagerness to strike at Napoleon, did not hesitate for a moment to make use of Switzerland to get into Lorraine by the shortest route. For that matter, the Swiss valleys have always been used, with perfect indifference to the guaranteed neutrality of the Republic, by the Continental powers. It was this possibility of the march down through Bavaria, to the narrow group of passes over the Alps, which gave interest to the rumours of an enormous army of Italians assembling between Turin and Lake Maggiore. The keenness of the French eagerness for alliance with Italy was obviously founded on the hope that the new ally would be able to break through to the north and take the German armies on the flank and rear, debouching at the head waters of the Rhine near Lake Constance in Southern Bavaria. Such an army, if it attained this point, would turn all the German defences from Basel to Strasburg, and would probably compel German withdrawal from Belgium for the defence of their beloved Swabia.

The most remarkable precedent for such a movement is the thrilling march of the great Russian commander, Suvaroff ; * in 1799, when Napoleon had gone to fight in Egypt ; and Russia, England and Austria took advantage of his absence to crush the new French Republic. Large armies were raised by these allies ; the treaties between Austria and Napoleon were torn to shreds ; the French envoys were wilfully insulted and driven from all the Courts subject to the dominating Coalition. Suvaroff marched across Europe from South Russia to Italy ; defeated Joubert at Novi, and Macdonald on the Trebbia ; and within six months had the French on the defensive. In Belgium and Holland a Russo-British army pushed forward and drove the French back nearly to Lille ; and the rest of Europe made up its mind that France was going to be well punished for daring

* Suvaroff, though an able commander and personally brave, was a coarse clown, and entirely uneducated. On one occasion he summoned the Austrian commanders, who were acting with him, to a Council of War. Having heard their opinions, he drew two lines, on a slate, with a piece of chalk. " Now, gentlemen," he said, pointing to the lines, " this line is the French, and that the Russians. The Russians will march against the French and (*spitting on the line and rubbing it*) wipe them out. Gentlemen, the Council is at an end."

to make people believe that men had a right to rule themselves. Still the French did not despair. They selected Massena to go to Switzerland, as this commander had shown proofs of great military ability in the previous Italian campaigns under Napoleon. But Massena commanding-in-chief and Massena under the orders of "General Bonaparte" were two very different persons. Still it is recorded that this commander wrought one of the most astounding disruptions of a profoundly studied attack known in the history of war. Indeed, the great French historian, M. Thiers, looks upon Massena's campaign in Switzerland as a series of military operations that ought to be studied by all men who make war their profession. France was in the same state of panic that held her in expectant anguish in August 1914, when Massena, after a delay that brought howls of derision from all parties, started to make headway against the four armies concentrating to annihilate him in Zurich. What Stonewall Jackson achieved in the Shenandoah Valley is, on a smaller scale, what Massena did in the Zurich Valley. But Massena did better; for, after a skilful retreat which completely confused the Allied Commanders, he turned on them fiercely at bay and beat them in detail. The allies were driven out of Switzerland, which remained in alliance with the French till the downfall of Napoleon.

The area of Switzerland is 16,000 square miles, and its population about 3,500,000. Its greatest length from east to west is 210 miles; and its greatest breadth from north to south, 156 miles.

In the south-west, between Lake Geneva and the Pennine Alps, an invasion would be held up by the positions of St. Maurice and Martigny. On the west, the Jura Range, backed by the rivers Saane and Aar, forms a strong line of defence; and the battlefield of Solothurn is on the banks of the Ziehl, a branch of the Aar from the south-west. The celebrated battlefield of Morgarten, in which the Swiss pikemen overthrew the might of Austria, lies between the Lakes of Zurich and Lucerne. The Rhætian Alps, on the east (Splügen, Stelvio, Siloretta Passes), and the Rhine on the east and north, form good natural defences against Austria and Germany. The country is very well supplied with railways; the chief railway centres being Basel, Zurich and Geneva. The line through the Vorarlberg Tunnel into the Tyrol is the shortest and cheapest route for the traffic between Roumania, Hungary, Austria and France.

The Swiss are of two distinct races, Teutonic and Latin. The Teuton element is in the north, east and centre, and make up two-thirds of the total. The Latin element is in the south and south-west. Between the Alps and the Jura is the Swiss Plateau, 100 miles long, about 16 miles broad, and 1,500 feet high.

The Balkan Peninsula, including Roumania.

First take the *coasts* of the different States. Roumania has 140 miles of the Black Sea coast, with one harbour (unfortified), Kustenji. This harbour is rarely closed by ice in winter; whereas the Danube ports and the South Russian ports are closed for weeks, sometimes months. A railway, 36 miles long, joins Kustenji to Tchernavoda, where the Danube is crossed by a magnificent bridge,* 100 feet above high water: the only bridge over the Danube in the last 600 miles of its course. This railway then runs on directly west to Bukharest, the capital of Roumania.

Bulgaria has 200 miles of the Black Sea coast, with two harbours 50 miles apart, Varna and Burgas. Varna is fortified; and a railway, 300 miles long, connects it with Sofia, the capital of Bulgaria, after passing through Shumla, Tirnovo, Plevna and the Isker Defile; and at Sofia it joins on to the Paris-Constantinople railway. Varna is not a good harbour: it is shallow, and unsheltered from the north-east winds. Burgas is only a poor harbour, and of little consequence either commercially or strategically. It is possible that, with the development of Bulgaria, Burgas may have to give way before Sizebolu, now a small port, 12 miles to the south-east. To the north of Burgas there is another little port, Misivri, where a landing is easy. There is a road skirting the coast from Varna to Burgas; and a railway from Burgas to Philippopolis, passing through Yamboli, Nova Zagora and Papasli.

Turkey owns 150 miles of the Black Sea coast, with only one little harbour, Midia. This harbour enjoys the advantage of having deeper water than any of the ports already mentioned. But if an invading army were to land here, they would find, as they marched inland, that they were not by any means moving along the line of least resistance; for the Istranja Dagh Range, the fortress of Tirnovo (not the Bulgarian, but the Turkish Tirnovo) on their right, and the intrenched camp of Kirki-Killise in front of them, would render their progress slow and difficult.

The Sea of Marmora and the two straits, Bosphorus and

* This bridge was partly destroyed by a German-Bulgarian force during the Great War; but it has now been restored.

Dardanelles, have 200 miles of coast, with three important positions, Constantinople, Rodosto (or Tekirdagh) and Gallipoli. Except at Rodosto there is no possible landing-place on the northern coast of the Sea of Marmora. Both the Bosphorus and the Dardanelles * are heavily fortified on both sides; the latter by the forts of Kilid Bahr and Maidos on the west, Kale-i-Sultanye and Nagara on the east. Gallipoli is also strongly fortified; and the lines of Bulair, stretching across the narrow isthmus of the same name, 4 miles broad, bars any movement of a hostile force into or out of the peninsula.

But by far the most important lines of defence in this or any other part of the Balkan Peninsula are the celebrated Lines of Chatalya, or Boyuk Tchekmedje. They stretch across the peninsula of Constantinople, 25 miles west of the capital, from the Sea of Marmora to the Black Sea. The position consists of a ridge about 500 feet high, flanked by broad lakes, with marshes and swamps in front. The flanks cannot be turned, and the position could be successfully held by a force of 60,000 men.

What was, before the war, the Turkish coast of the Ægean Sea, on the north, is nearly 800 miles long; yet there are only two places in all its length where the successful landing of an invading force might be effected: Dédé Agatch and Salonika. A force landing at either of these places could move into the peninsula along the lines of least resistance: the valley of the Maritza, or that of the Vardar. The line of the Maritza would be preferable, as it is nearer the capital, and it leads directly on to Adrianople and its strong frontier outpost, Mustafa Pasha.

Besides the two ports I have mentioned, Dédé Agatch and Salonika, there is only one other place where a landing might be effected: that is Kavala, between the valleys of the Mesta and Struma rivers, and opposite the island of Thasos. But the country all round here is marshy and malarious; and the probable losses from fever alone would be sufficient to keep any commander from landing a force there. The western coast of the Balkan Peninsula, the Adriatic, has no harbour or port worth the name; although a landing might be effected at Durazzo (or Drach), whence a road leads along the valley of the Schumbi River to Monastir. A road also leads from the mouth of the Viosa River, by Avlona, to Yanina.

Looking at the map, and taking nothing else into consideration,

* Now placed under the League of Nations.

the military student might be inclined to think that the river Pruth would form the first line of defence for the pre-war Roumania, in case of an attack from the north-east. But the military force at the disposal of Roumania was never sufficient to hold the long and difficult line of the Pruth. So that her first line of defence was a chain of fortifications and forts, about 50 miles long, from Galatz, by Nemolassa and Focsani, to Odobesti; that is, with the Danube and Lake Bratisu on the right flank, the Carpathians on the left, and the river Sereth in front. Behind this line, and directly connected with it by rail, is Bukharest, the largest fortified camp in the world, except Paris; capable of accommodating 250,000 fighting men. It is surrounded by 18 forts, and the total perimeter of the fortifications is 50 miles.

The new Roumania has the strong line of the Dniester for its eastern frontier. Three lines of railway from south-east Russia cross this river; and a double line, in Ukraine territory, runs roughly parallel to the river, which would be certainly used as a good lateral line of communications, in the case of a war between the Ukraine Republic and Roumania. This line runs from the great seaport of Odessa, through Razdyelnaya, past the Birzula and Jinerinka junctions, to the small frontier post of Volochisk. From Razdyelnaya a double line branches off to the west, crossing the Dniester at Tiraspol (on the eastern bank) into the strong fortress of Bender (on the western bank) in Roumania. From Bender two lines run: one north-west, crossing the Sereth at Ungeni; the other south-west, through Reni (on the Danube) and on to Bukharest. On the north, the little railway terminus of Novo Selitsa, on the right bank of the Dniester, is fortified, and meant to watch any movements from the direction of the strong fortress of Kamenets Podolski, further north. The frontier of Roumania in this direction is now much shorter, and therefore stronger than before. The Ukraine Government are doing all in their power to induce Roumania to use Odessa as the port for the bulk of her exports.

In the west of Roumania, the best line of defence is the river Aluta and the strong position of Slatina; but this could be turned by an advance over the comparatively easy passes of the Transylvanian Alps. These passes, going from west to east, are: Verciorova, or Iron Gates (railway, Orsova); Vulkan; Rotherthurm (railway, and defile of Aluta); Torsburg; Tomös (railway); Buzeu; and Gyimes (railway).

Iassy is the principal town in the north of Roumania ; it commands the passage of the Pruth, and the railway from Odessa and Kisheniev. The principal town in the Dobrudscha, in addition to those already mentioned, is Tulchea, commanding the Sulina mouth of the Danube ; and there is a good metalled road leading from here to the Kustenji-Tchernavoda Railway, striking it at Medjidie.

The other towns of importance in Roumania are Braila, Giurgevo, Craiova, Pitești and Ploesci.

Before the war, Bulgaria was the rising power in the Balkan Peninsula, strongly defended by her geographical position, her well-equipped army of 300,000 men and 100 batteries of artillery. But, in an evil moment for Bulgaria, her "Czar" Ferdinand, Field Marshal of the German army, proving true to nothing but his execrated Bourbon blood, turned against Russia and joined the enemies of the Allies, with the same treachery and want of gratitude that Greece displayed towards France and England.

Bulgaria evidently did not believe in Army Corps ; so she split up her forces into divisions, nine in number, with their respective headquarters at the following places : Sofia, Dubnitsa, Stara Zagora, Philippopolis, Sliven, Shumla, Rustchuk, Plevna and Vratza. The principal passes across the Balkans by which her forces moved against Turkey in 1911, and against the Salonika force of the allies in the war, are : Nadir Derbend (the most direct road from the fortress of Shumla to Constantinople) ; Khoja Balkan ; Hainkoi ; Shipka ; and Baba Konak ; in this order, from east to west.

The most important Bulgarian towns on the Danube are : Widin, Rahova, Nikopoli, Rustchuk and Silistria. The first line of defence of Bulgaria, on the west, against Serbia, is formed by the river Timok and the Stara Planina Range. Behind this is the line of fortresses, Widin, Belogradchik, Slivnitza, Sofia. The celebrated "Quadrilateral" consists of the four positions, Rustchuk, Silistria, Varna and Shumla. The most important strategic position in Bulgaria is Sofia, on the Paris-Constantinople Railway ; commanding the valleys of the Upper Isker and Maritza. A railway, 140 miles long, connects Rustchuk with Varna.

The former Serbia and Switzerland are the only two countries in Europe which have no sea-board. Four rivers form the greater part of the old Serbian frontier : the Danube, for 200 miles ; the Drina (separating it from Bosnia), 100 ; the Save,

90 ; and the Timok, 25 miles. The capital is Belgrade, situated at the junction of the Save and Danube, opposite the Austrian town of Semlin. But the principal railway centre is Nisch, where three lines, from Belgrade, Salonika and Constantinople meet. Belgrade has no fortifications worth speaking of. Its situation was commercially strong, but strategically weak ; being on the frontier of the country of which it was the capital. A Serbian army, concentrated for an invasion of Bulgaria or Greece, or for the defence of its own southern frontier, would find the best situation in a triangle formed by the points Nisch, Alexinatz and Krujevat. The principal military centre in the west is Valjevo, and in the east, Alexinatz. The principal river is the Morava, which leads from the very centre of the Balkan Peninsula to the Danube.

Montenegro had 26 miles of coast, which now belong to Serbia, or Jugo-Slavia ; and two poor roadsteads, Antivari and Dulcigno. Cattara is the natural harbour of the country. The capital is Cettigne.

The first line of defence of the new Grecian territory would be a line drawn through the following places from east to west : Tirново (on the northern slopes of the Istranya Dagħ) ; Kirki Killise ; Mustafa Pasha ; Kirdjah ; Banjska (on the Upper Mesta) ; Juma ; Egri Palanka ; and Uskub. Behind this line, and towards the more dangerous section, the east, is the very strong fortress of Adrianople, at the junction of the Tundja and the Maritza ; surrounded by an elaborate system of fortifications, and having a strong advanced post in Mustafa Pasha, only 16 miles distant.

The Vardar, 225 miles long, leads into the Macedonian highlands. The Maritza is a more important river, and is navigable up as far as Philippopolis, 170 miles from its mouth.

The capital of **Albania** is Scutari ; and Prisrend is a most important position, commanding the principal pass across the Tchar Dagħ Range.

Albania is an anachronism and a relic of barbarity, still three centuries behind the most backward parts of Europe. The Albanians brutally killed and robbed many Serbian soldiers who were retreating towards the sea-coast after their defeat by Mackensen.*

* When the author was about to enter Albania, many years ago, he asked a Serbian for information about the character of the Albanians, as a people. The Serbian said : " If ever you shake hands with an Albanian, just count your fingers." ,

CHAPTER V

THE FLAT LANDS OF EUROPE

Russia, Holland and Belgium.

The Russian historian Segur relates that the French ambassador of that time, talking to the Czar Paul, mentioned the name of a certain person as a "man of some importance" in Russia. Upon which the Czar at once sharply interrupted him, saying: "There is no *important* man in my empire except the man I honour with my conversation for the time being; and it is only so long as I happen to be talking to him that he is of any importance." This affords us an aspect of that Autocracy which so well and truly laid the foundation for the pyramid of skulls raised in our time by Messrs. Lenin and Trotsky.

Russia! To the ethnologist, the sociologist, the political economist, the geographer, or the military student, there has never been a greater puzzle, a more difficult problem to solve, and a more perplexing study than this same Russia. Filling two-thirds of what is called Europe and one-third of Asia, the first difficulty is to know where Europe ends and Asia begins. Is Russia the most Oriental of Western Nations, or the most Western of Oriental Nations? Is it the most backward part of Europe or the most advanced part of Asia? Or is it, perhaps, something distinct altogether from Europe and Asia (as Messrs. Baring and Stephen Graham would have us to believe), in its organic conditions of civilisation?

The Slav mentality seems to possess nothing in common with the normal European mind. It is almost always possible to forecast how the average European would be likely to act under certain conditions and in certain circumstances. But it is absolutely impossible to say how the Slav mind will work under similar conditions. At the beginning of the Revolution the most prominent exponent of Russian mentality was a man who seemed to believe that revolutions can be accomplished

without the shedding of blood, and that wars can be fought and won by professors of moral philosophy and political economy. The best representative of modern Russian literature was Tolstoi, of whom an eminent French writer, who had made a special study of modern Russian literature and history,* says :

“ Tolstoi has the mind of an English chemist in the soul of an Indian Buddhist ; he is a man who could never determine his actions and thoughts by a regard to the welfare of society, because society was never represented in his consciousness. He wrote an *Exposition to the Holy Gospels*, but he also wrote the *Kreutzer Sonata*.”

The distinguishing feature in the Slav character is its emotionalism. The Russian will laugh till he sheds tears, or will equally weep copiously, for causes which would exercise no influence whatever on the feelings of the German, Frenchman, or Englishman. He will fall into raptures at the sight of the most commonplace pictures or statuary, and a certain style of music throws him into hysterics. That which other Europeans call “ higher education ” has an effect on him which recalls the deep significance of the ancient Hebrew legend when the eating of the fruit of the tree of knowledge only produced the sense of nakedness and shame. It is with him as with some other Asiatics who have imbibed a smattering of Western education. It makes him discontented with his lot ; even when he owes a good position in society to his education only. In the majority of cases it changes him into a revolutionist ; and the higher he rises the more incapable does he become of adapting himself to the conditions of civilised society. Yet he will be the first to imagine that he has a mission to improve the world and the whole human race ; and he works out the most elaborate schemes for the happiness of all mankind, which are conspicuous quite as much for their fervent philanthropy and pathetic sincerity as for their utter uselessness, absurdity and impracticability.

As to any special originality in the Slav mentality, culture, or art, we need only read what one of the Russians themselves † has to say about it :

“ Since we got into touch with the Western world we have greedily assimilated everything that has come to us from France

* M. de Vogué.

† Koscheleff. Still stronger is the evidence of another eminent Russian doctor, Tokarski. He says : “ Not only are we Russians the most slavish

and Germany. We have been enthusiastic followers of Voltaire, Rousseau, Helvetius, Schelling, Hegel, Prud'homme and Adam Smith. Sometimes we look at everything through French spectacles, then we put on German glasses ; the mind of one acts in French, of another in German, and a third in English. But we have no natural gift of seeing things and judging them for ourselves ; so we remain a nation of mere smatterers, imitators and copyists."

The best synopsis of the historical geography of Russia is to be found in the beginning of M. Rambaud's delightful book, *Histoire de la Russie*. He says :

"Toute l'histoire de ce pays est celle de ses trois grands fleuves ; elle se divise en trois périodes : celle du Dniéper avec Kief, celle du Volga avec Moscou, celle de la Néva avec Novgorod au huitième et Saint-Pétersbourg au dix-huitième siècle. Le Dniéper avait fait la Russie byzantine, le Volga la fit asiatique, la Néva devait la rendre européenne. La grandeur de la création de Pierre consista précisément à reporter sa capitale sur la Baltique, sans abandonner la Caspienne et le Volga, et à chercher pour ce grand fleuve oriental une issue nouvelle qui le mettrait en communication avec les mers d'Occident."

What Prince Dolgorouki has to say about his own country is also worth listening to, and will perhaps throw a ray of light on Russian history. The following is a correct translation :—

"Russia is a massive building with an European exterior and even an European roof. But the furniture in the rooms of this building are not only genuine Asiatic ; they are arranged after the Asiatic fashion. The occupants of the building and the servants in it are dressed in European costumes ; but they live and perform their functions like pure Tartars. No country in the world is richer in Laws, Regulations, Orders and Commands ; the Russian Codex runs to many thousands of large pages ; and every year new laws are added on to it. But this Codex, however valuable and profitable for paper-manufacturers, is for the people a dead letter. The very first article in the first volume, which places the Government superior to all law, makes the scores of thick volumes more useless than so much blank paper."

of imitators, but imitation has actually become a disease among our people. In Russia only is to be found that disease of the nerves which we call *meriatschenya*. A man who suffers from this disease cannot prevent himself from imitating any striking action seen by him ; for example, if he sees a lunatic throwing himself into fire or water, he cannot help doing likewise."

Russia is a land of the most striking contradistinctions. He who has travelled over Russia cannot help seeing this. At one time he is drawn by reindeer or dogs over wide-stretching, cold, lonely tracts; at another time he goes along in a comfortable railway compartment, or in the handsome, easy saloon of a steamboat, on one of the largest rivers in the world; and next day he is jolting over the steppes in a tarantass, or through sultry sands on the back of a camel. In Verkoyanski he has to bear 120° of frost, in Merv 120° of heat in the shade. In the country north of the Black Sea, between the latitudes of Venice and Paris, there is in January the same temperature as in Stockholm: in Astrakhan, the same latitude as Geneva, it is far hotter than Madeira in July. In the Khirgiz Steppes, the same latitude as the middle of France, the quicksilver remains frozen for days in January, and the thermometer must be put in water, to keep it from bursting, in July. The Yakuts sell frozen milk by the yard; the Samoyeds bury their dead in holes, not dug, but burnt into the frozen ground. The nature of the country is reflected in the character of the people, and in their flat, vacant features, where the eyes appear like two drops of frozen water. The wife in the household is a beast of burden; the village carpenter extracts the nails from boards with his teeth. The Russian peasant (80 per cent. of the population) has no individuality, nor resources in himself; and, at the beginning of the war, when his only pleasure in life (vodka-drinking) was taken away from him, he felt that there was nothing more left to distinguish him from the beasts of the field, since he had long been deprived of the right of speech.

(The following paragraphs mainly refer to pre-war Russia, and are nearly the same as in the first edition of this work. The Military Geography of any country is not much affected by its government or its lack of government.)

Moscow and Petrograd, the two capitals of the Russian Empire, may be looked upon as the strategical objective of any army attacking Russia from the west.

Moscow is the holy city of the Russians, the centre of Russian national life, the commercial centre, the principal railway centre, the heart of the Russian Empire.

Petrograd is the centre of government, the departmental centre. Its advantageous position on the shores of the Gulf of Finland, at the junction of a good many large navigable arteries,

and its military importance, give it a certain amount of artificial superiority over Moscow.

Petrograd is 410 miles from the nearest point of the German frontier; and Moscow 430; and from Petrograd to Moscow is 403 miles. Yet if an army invading Russia from the west had succeeded in capturing these two large towns, still the resisting and fighting power of the Russian Empire would be by no means broken.

The disastrous campaign of 1812 shows how dangerous it is for an army of invasion to push into the heart of the country; how difficult to seize and how elusive is the power of Russia. Napoleon said: "Russia cannot be conquered; for it is so broad that it has no flanks, and so deep that it has no end."

Therefore, in studying the defensive conditions of the western frontiers of Russia, it is not a question of a victorious enemy holding a certain position or a certain line which would guarantee to him any definite superiority in subsequent military operations.

The western frontier of Russia runs along the frontiers of Finland, Esthonia, Latvia, Lithuania, Prussia, Poland and Roumania.

As has been already mentioned, the base of operations of a German army acting on the Russian frontier would be the quadrilateral of Königsberg, Danzig, Thorn and Posen; strong places which were always kept in a state of readiness and fully equipped for war.

Eight railway lines for concentration or attack would assist in the deployment of troops against the western Russian frontier. These are:—

1. Königsberg-Eydtkuhnen.
2. Königsberg-Fort Boyen-Lyck.
3. Danzig-Oertelsburg. (By Marienburg, Osterode and Allenstein.)
4. Danzig-Soldau.
5. Graudenz-Joblonovo.
6. Berlin-Thorn.
7. Berlin-Posen.
8. Dresden-Glogau-Posen.

These, without mentioning the lines by Breslau and Mysłowitz. And these lines of concentration are connected by a strategic line running right along the frontier; from Memel by Insterburg (on the Pregel), Allenstein, Eylau, Thorn, Gnesen, Jaroczyn, Wilhelmsbruck, Kreuzburg, and Mysłowitz. And nearer to the frontier is the line connecting Insterburg, Lyck and Oertelsburg.

Corresponding to this network of railways on the western side, we have a rather scattered and irregular system of lines on Russian territory, thus :

1. Vilna-Kovono-Königsberg.
2. Brest-Litovski, Bielostock, Königsberg.
3. Warsaw-Soldau-Danzig.
4. Warsaw-Thorn.
5. Warsaw-Skiernowitz-Czestochawa-Vienna.
6. Warsaw-Ivangorod-Radom-Vienna.

Also the main lines from Petrograd, Moscow and Kieff meet at Warsaw. From Petrograd to Warsaw is 650 miles, and from Moscow to Warsaw is 700 miles. From Moscow to the principal Russian seaport on the Black Sea, Odessa, is 600 miles.

The gauge on the Russian railway lines (with the exception of the line which runs from Warsaw to Czestochova) is larger by 4 inches than that of the railway lines in the rest of Europe (59·8 inches to 56 inches). The object of this is to prevent waggons and carriages of other lines from being conveniently run on the Russian railways. But this arrangement, excellent though it may be in some circumstances, is a thing which cuts both ways. Commercially, in the case of exports from Russia, it causes an extra amount of delay and work on the frontier. And, from a military point of view, its great disadvantages were seen in 1877, when troops and war matériel were being hurried up through Roumania to the seat of war, and were unduly delayed by the changes on the Russian frontier.

Now Prussian engineers have invented a machine by which it is possible to extend the distance between the waggon wheels, so as to make them run, without change or unloading, on to the Russian railways. But the probability is that if Germany were to invade Russia the German railway battalions would simply lay down one track inside the Russian track so as to suit German traffic. (*This was done in 1915.*)

Nearly all the Russian railways have only a single line of rails ; the stations are at wide distances apart ; the speed is never very great, as the railways are so badly constructed they cannot stand trains going at express speed ; and the railway staffs and employees are, as a rule, lazy and incapable.

The main lines from Warsaw to Moscow and from Kieff to Moscow are separated by the huge and broad Pinsk Marshes ; an obstacle absolutely impassable for troops. The railway from Brest-Litovski to Pinsk and Gomel gives a great strategic advantage to Russia. Near Pinsk the river Pripet begins to be navigable for steamers ; and for lateral communication there

is a railway line connecting Minsk and Gomel; so that Russia could transport her troops across this otherwise impassable tract of country, while an enemy coming from the west could not enter it. And Russia could also make use of water transport for the lateral movements of her troops in this direction; that is, the river Niemen, the Augustovo Canal, the Bobr, the Narev, and the steamboats on the Dnieper-Bug Canal.

In Western Russia, the first line of defence against invasion is marked by the course of the Niemen, the Augustovo Canal (running north and north-west of Bielostock), the Bobr, the Vistula and the Drevenz; this would be the best natural line of defence against East Prussia or a movement from the Quadrilateral. Against a movement from Posen and Silesia, the line would be that of the lakes Goplo and Podwitz, the Prosna and the Warta. The marshes on this line are in themselves a formidable obstacle.

From a military point of view, the frontier may be divided into two distinct parts: the Polish frontier, from Memel down to Galicia, and the Volhynia-Podolia frontier down to the little river Podhorze, which joins the Dniester near Khotin. These two theatres of operations, separated by the marshes on the southern frontier of Poland, are only connected for military purposes by a sort of isthmus, which is marked by the railway line from Brest-Litovski to Kieff.

The great military centre of Western Russia was Warsaw, 120 miles from Thorn. The Alexander citadel, with six detached forts, on the left bank of the Vistula, and fort Slivicki on the right bank, command not only the town, but also the passage of the river. In addition to these, there is a belt of fifteen detached forts all round Warsaw, on an outer line with a circumference of about 20 miles.

About 18 miles north-west of Warsaw is Novo-Georgievski, formerly called Modlin, at the junction of the Narev and the Vistula, on a plateau which commands the two rivers for a distance of about 20 miles. Between the Narev and the Vistula are the forts of Novy-Dvor, to cover the passage of the Narev, which is here 160 yards broad. The two places form one huge entrenched camp, capable of containing 60,000 men. The garrison required for its defence is calculated at 12,000 men. There is here a stone bridge across the Vistula; a railway bridge and a suspension bridge across the Narev.

It is a great mistake to say, as even some writers on Military Geography have said, that the Vistula would be Russia's first line of defence on the west. For, looking at the map, anybody can see that an Austrian army, operating on the south, and a

German army operating from Thorn could turn the whole line of this river with the greatest ease.*

About 50 miles south-east of Warsaw, and near the junction of the Wieprz and Vistula, is the entrenched camp of Ivangorod, surrounded by two detached forts on the right bank, and seven on the left. And south of this place, just after the Vistula leaves Austria, there is the small fortress of Annapol.

North of Brest-Litovski is the fortress of Bielostock, which commands the junction of the railway lines from Königsberg to Warsaw, and from Petrograd to Warsaw. Goniondz, on the Bobra, and Graievo, just where the little river Lyck leaves Poland, are fortified to defend the line of the Bobr-Narev.

Kovno commands the line of the middle Niemen; and it is surrounded by a belt of thirteen forts.

Behind the line of the Niemen, with Kovno and Vilna, we come to the line of the Duna, defended by Dünaburg and Dunamunde. Dünaburg is a double bridge-head, with a strong line of works on both banks. The headquarters of the Russian Engineer Corps were at this place. At the mouth of the Duna is Dunamunde, a strong fortress, built on sandbanks, to protect the port of Riga. Close to Riga, on the left bank of the Duna, is the bridge-head of Koberschanz.

The line of the Beresina (an important and historical tributary of the Dnieper) is defended by the fortress of Bobruisk, on the railway line from Minsk to Gomel. This opening into the centre of Russia, from the west, is between Vitebsk on the Duna and Orsha on the Dnieper. M. Thiers, in his account of the campaign of 1812, calls it "The Gates of the East." The advance to Moscow through this gate is barred by Smolensk, on the Dnieper, an important railway junction.

(The paragraphs from here to the beginning of the article on the Siberian Railway are left as they were written for the first edition of this book, 1908.)

An Austrian army moving from the south into Poland would very probably make Lublin its first objective. But a Russian army, placed so as to have its right resting on Kovel

* During the war it was part of the author's duties to translate, for the benefit of the military authorities in India, the wireless messages picked up in Karachi. On July 19, 1915, a Russian wireless, from Tiflis, announced that the Grand Duke Nicolas, the Russian Commander-in-Chief, had ordered the evacuation of Warsaw, which was to begin on the next day, the 20th. The newspapers knew nothing of this till about August 1. In the meantime the Jefferson Bricks were writing leading articles saying that "the Russians were bound to hold the line of the Vistula to the last man," and "Warsaw had been made impregnable!"

and its left on Lutsk (Michailograd), would be in a good position to strike at the flank and line of communications of this army. Kovel and Lutsk are both fortified, and connected by rail.

In case of a war between Russia and Germany, if Germany assumed the offensive, and started from Silesia, she would first of all strike against the three lines of the Prosna, the Warta, and the Ner. Moving from Posen she would be met by the line of the Vistula. And in neither of these cases would there be a railway to connect the army with its base of operations. Therefore there is but very little probability of Germany moving direct from Silesia as a base, in case of a Russo-German War.

But four German armies moving simultaneously from Königsberg, Danzig, Thorn and Posen, could come into action on Russian territory before Russia could possibly unite her forces. There is no doubt as to what the first strategic object of these armies would be. They would endeavour to isolate the Russian armies in Poland by a wide turning movement, similar to that by which Napoleon isolated Mack in Ulm. Three of the armies would move on curves south-east and south, the longest curve on the left; with the fourth army as a pivot, at Posen.* It is not probable that a German army would move from Königsberg eastwards into Russia, as it would expose its right flank by such a movement. It would be much more reasonable for it to avoid the marshes of the Bobr, and make its objective Ostrolenka, an important crossing of the Narev.† It would then have its left flank covered by the marshes of Masurenland, because from the Lyck to Willenberg the country is absolutely impassable.

These four armies would march on the following lines :—

1. Königsberg-Bielostock,
2. Elbing-Oertelsburg (north-west of Ostrolenka),
3. Danzig-Mlava,
4. Thorn-Warsaw,

whilst a corps of observation would be placed in the direction of Königsberg-Kovno, and an army of reserve at Posen on the extreme right. Each of these armies would have at its disposal one main line of railway, and would have its communications assured with the neighbouring armies by the lines already mentioned. In this case the army at Posen would not only be a reserve, but also an army of observation for Silesia.

To meet such an attack, it is probable that the Russian

* According to Hindenburg's account (published 1920) this is exactly what took place in 1915.

† This was the plan of the German Chief Staff before the battle of Allenstein (*Hindenburg*).

commander would form his armies of defence facing to the north-west, on the line of the Niemen-Augustovo Canal-Bohr-Narev; the right resting on Kovno, the left on Novo-Georgievski.* This would be certainly rather a long line, 250 miles; but it cannot be crossed except at very few points; it is greatly strengthened by the marshes of the Bohr and Narev, which limit the front to be defended; and, as a reinforcement for this line, the Russians would have behind them the strong places of Kovno, Novo-Georgievski and Warsaw. Almost in the middle of the position, to the south of Lomza, on the Bohr, we have the heights of the Czernowy-Bor, about 700 feet high, offering a splendid tactical position in the Russian line. The fortifications of Grodno would also play an important part; and the line of railway, Düna-burg-Vilna-Bielostock-Warsaw, would insure lateral communications.

In the case of an Austro-German alliance: whilst the German armies would be forming on the line Königsberg-Thorn, with their extreme right at Posen, the Austrian armies would have for their base the line Cracow-Przemysl.

While the German offensive would have for its objective the line I have already mentioned, the Austrians on their part would take as their principal line of operations, for their army on the right, the route Zamosc, Lublin, Kock, between the Vistula and the Bug, so as to turn the defences of the Vistula on the east; but before they do this they should secure their right flank by occupying the line of the Bug and masking Loutsk. While this is taking place, the left Austrian army, starting from Cracow, by the left bank of the Vistula, would naturally make Warsaw its objective; and the best position of defence which the Russians could take up to meet them here would be the heights of Lysa Gora, east of Kielce and 40 miles south of Radom.

The junction of the allied armies of Austria and Germany would probably be arranged for Brest-Litovski; and the last line of defence for the Russians would be the Bug.

(It will prove interesting for the military student to compare the above forecast, written in 1908, with what actually took place in the war, seven years afterwards.)

The southern theatre of operations, on the frontiers of the provinces Volhynia, Podolia, is separated from the northern theatre by absolutely impracticable country. The Russians would use two railway lines for concentrating their army here: (a) Kursk-Kiev-Doubno, and (b) Kharkof-Balta-Proskurov.

* A Russian army, under Rennenkampf and Samsonoff, carried out its strategical concentration along this very line, August 3-10, 1915. On August 26-30 it was defeated by Hindenburg, at Tannenberg.

Each of these run into Galicia, and unite a little to the east of Lemberg. And these two lines are connected with the Black Sea ports of Odessa and Nicolaiev. Doubno and Proskurov are fortified, but are not of any great strength.

The Russian base would be the line of the Dnieper, with Kieff.

KIEFF is a large and very important city, of 150,000 inhabitants, situated on the middle Dnieper. North of Kieff the Dnieper receives all its important tributaries, many of which are navigable; so that all the produce of the upper basin of the Dnieper can be conveyed by them to Kieff. Its commercial and military importance is mainly due to its geographical position. It is the headquarters of the provincial governments of Kiev, Volhynia and Podolia; it is partly built on a terrace about 400 feet high, which rises up on the right bank of the Dnieper, crossed here by two bridges. It is defended by a citadel and a belt of nineteen detached forts.

Russia is never likely to be attacked by Roumania; nor through Roumania, unless Roumania is allied with Austria. From Khotin down to the east of Galatz, the Pruth forms the natural boundary between Roumania and Russia; and the strong places in Bessarabia are: Kamenets-Podolski, Khotin, Bender, Tiraspol and Akerman.

Kamenets-Podolski is just outside the northern boundary of Bessarabia; its position is strong, but it is weakly fortified. Khotin is very strongly fortified, opposite the Austrian fort of Zalescysk, just before the Dniester leaves Austria. Bender is on the right bank of the Dniester, and defends the crossing of the Odessa-Kischeniev Railway. Tiraspol and Akerman are not strongly fortified.

Let us now consider the case of a war between Russia and Austria only, with Germany left out. If we study the Russian frontier, from Cracow to the Danube, we shall see that its enveloping form gives Russia certain decided advantages. Because, in the first place, by the railways of Poland, Volhynia, and Podolia, Russia could converge simultaneously her armies from Warsaw, Kieff and Odessa, all round the perimeter of the Carpathians; thus compelling Austria to keep her troops spread out on a long line, with uncertainty as to the point of attack. While Austria has the advantage of interior lines Russia has that of the re-entrant. In this case the line Lublin-Michailograd-Doubno-Proskurov would be the strategical front of the Russian armies. The strategic objective of the Russians should be Buda-Pesth rather than Vienna. Because, in marching on Vienna, a Russian army would be exposed to attacks from Austrian Silesia and Bohemia. Again, the Hungarians hate the

Russians. The recollections of the War of 1849, when Russia came to the assistance of Austria to crush the Hungarians, have not yet died out.

So that even if a Russian army succeeded in getting as far as Vienna, by the valleys of the Oder and March, the campaign would not be, by any means, at an end. The Russians would still have to break down the resistance of Hungary; and we know what difficulties they encountered, in 1849, in their march across the country between the Waag and the Neutra. This is why their best plan would be to attack Hungary first of all; and the direction of their lines of operations should be across the passes of the Carpathians, in the lowest and easiest parts of the chain; that is to say, between the bastion of Tatra on the west and Transylvania on the east; from Kaschau, on the Hernad, to Sziegth on the Theiss; especially by the comparatively easy Verescke Pass, leading into Hungary from Lemberg and the valley of the Dniester. Getting by this route to Munkacs, they would be on the line which joins Kieff to Buda-Pesth, the very route which has been followed by the invading Huns and Mongols in former times.

If, on the contrary, the first battles fought north of the Carpathians were not favourable to Russia, the beaten armies could easily retire north, east and south-east. They would thus compel the Austrian commander to split up his forces; and we need not consider the probability of an Austrian army pushing into the heart of Russia. It is only as the right wing of an allied Austro-German army that they would be justified in doing so; and, even then, they would only operate in Poland. From Vienna to Cracow is 260 miles, and from Vienna to Buda-Pesth is 170; therefore it would pay the Russians better to get to Vienna by the way of Buda-Pesth than by Cracow.

The bastion of the Transylvanian Mountains would acquire considerable importance in case Austria wished to arrest the march of a Russian army on the lower Danube by striking at its right flank.

The slowness of her mobilisation, the long distances to get over, and the insufficiency of railway lines, at the beginning of a war, would place Russia at a great disadvantage. But then we have to take another thing into consideration: a modern war on the frontiers of Russia would not be at all likely to begin with the same rapidity of movement as a war on the Franco-German frontier. At least it would not begin at once with the shock of huge armed masses of men. And again we must remember that, even in time of peace, Russia keeps up a large army in Poland; and this army ought to be well able to hold

its own for a certain time. She has also 10 divisions of cavalry always on the Polish frontier ; which means 25,600 men and 120 guns ; and the task of these divisions at the beginning of a war would be to ravage and devastate the enemy's country, interfere with his mobilisation, and destroy as far as possible all means of communication. Russia could well bear a few minor defeats at the beginning of such a war ; and even the greatest and most victorious army would find it difficult to strike at her so that she could not recover from it.

Of all the military operations carried out during the Great War there is none more interesting and instructive than those which took place near the Russo-Austrian frontier, in Galicia, at the end of August 1914. Austria's first line of defence in this direction was a purely artificial one ; namely, the line of strong places from Cracow on the west to Lemberg on the east ; passing through Tarnow and Yaroslaw, and backed up by the strong position of Przemyśl behind the centre.

From different parts of this line as a base, two Austrian armies, composed of 6 Army Corps and 5 Cavalry Divisions, invaded Russia. Both of these armies moved in a north-eastern direction.

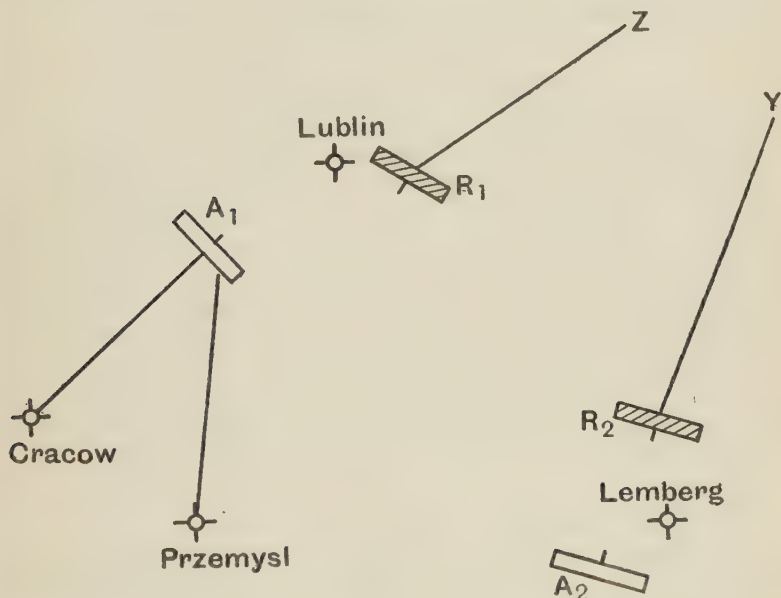
For convenience of reference, and to show the problem clearly, we shall call the left Austrian army which moved from the Cracow-Przemyśl line A_1 . This consisted of 4 Army Corps, and its objective was Lublin, a most important strategic point marking the junction of four lines of railways. If the Austrians had succeeded in taking and holding Lublin, they would then be in a very favourable position to attack the strongly-entrenched camp of Ivangorod, and to strike at Warsaw from the south and south-east, while the Germans attacked it from west and north-west.

This was very sound strategy, so far ; and (as Hindenburg informs us) owed its origin to Berlin.

The Austrian army on the right, which we shall call A_2 , consisted of 2 Army Corps, that is, only half the strength of A_1 . And it was to move from Lemberg, as a sort of right flank guard to A_1 . The Austrian commanders well knew that they would be opposed by Russian forces, but they were absolutely ignorant of the strength of these forces. And, because Lublin was such a very important place, they believed that, of the forces moving against them, the larger would be certainly detailed for the defence of Lublin. But, on the other side also, the Russians were moving two armies towards the Austrian frontier. We shall call them R_1 and R_2 with their

lines of communications going back in the directions of Z and Y, respectively. Soundly and correctly the Russian commander decided that *the turning of the Austrian first line of defence was a strategic objective of far more importance than the protection of Lublin*. And this is why he makes his second Army, R_2 , much stronger than R_1 .

Then a strange and interesting situation developed, for which there is no parallel in any other of the operations of the Great War. The Austrian army, A_1 , attacked, defeated, and drove back the Russian Army R_1 .



But before the Austrian commander of A_1 had begun his attack on R_1 , he heard that the other Russian army, attacking Lemberg, was far larger than the army he had in front of him. So he hurried away two of his Army Corps, to the right, to protect Lemberg. Here, after a desperate battle, which lasted, day and night, for 48 hours, the Russians completely defeated the Austrians, with a loss of 20,000 in killed and wounded, 60,000 prisoners and 200 guns.

Now here we have two victorious armies standing side by side, but facing in opposite directions, with the line of communications of each threatened by the other. What should the commander of A_1 have done?

Well, if, during his military career, he had only condescended

to read what the great English strategist, Hamley, has to say on the subject, he should have had no hesitation as to the right course to be adopted. For, in Hamley's *Operations of War*, p. 99, he would have found these remarkable instructions :—

“ When two armies are manœuvring against each other's flanks or communications, that army whose flanks or communications are most immediately threatened will abandon the initiative and conform to the movements of its adversary.”

The communications of A_1 were more immediately threatened than those of R_2 ; because the commander of the latter, fighting in his own country, could easily change his line of communications.

So that the commander of A_1 should not have hesitated for a moment : he should have fallen back at once.

Yet, what does he do ? He swings round to his right, and strikes at the line of communications of the victorious Russian force, R_2 . The Russian commander made no mistake as to the best way for dealing with this. He “ formed front to flank ” with his right, and kept threatening Lemberg with his left. Lemberg surrendered ; and the Austrian commander of A_1 was beaten back in the direction of Cracow, after a loss of 12,000 men in killed, wounded and prisoners.

If Hamley had been endowed with the gift of prophecy, he could not have foretold with greater accuracy what was to happen in Poland in 1914.

Russia's Great Railway.

The system of railways commonly known as the *Trans-Siberian* consists of sections. The Siberian Railway proper starts from Cheliabinsk, 1,360 miles from Moscow, and 1,450 from Petrograd. From Cheliabinsk it runs to Irkutsk, 2,020 miles. It is then carried on by the Trans-Baikal section to Manchuria, 944 miles. Then we get to what the Russians were pleased to call the “ Chinese Eastern Railway ” ; though the only Chinese who had anything to do with it were the coolies who worked on the line under Russian gangers. From the Manchurian frontier (the Argun River) to Pogranichnaya is 920 miles ; and from here, by the Ussuri Railway, to Vladivostock, 143 miles. The whole distance from Moscow to this port is 5,390 miles.

The Trans-Siberian Railway was built to fulfil both economic and strategic purposes. The economic development of Siberia

was a less important object than the strategic requirements of Russia for railway connection with her Far Eastern dominions. In order to tap the potentially richest parts of Western Siberia, one of the original schemes for the line was to lay it from Orenburg through the Khirgiz country to Akmolinsk, a long distance south of the route adopted ; when, however, it would have encountered a very difficult country in the Altai region, and would have afforded but a devious route to the Far East.

Again, a line wholly within Russian territory was planned, and part of it was built, northward from Vladivostock along the Ussuri Valley as far as Khabarovsk (480 miles), before it was decided instead to lay the easier and shorter line by Manchuria through Chinese territory. But, after the Russo-Japanese War (1904-05), when Port Arthur passed into Japanese hands, the whole line through Manchuria offered less security to Russia as her sole means of access to the Pacific seaboard. Then the Amur scheme was revived ; but instead of closely following the Amur Valley, as on purely economic considerations it should have done, it has been carried through much more difficult and almost wholly undeveloped country to the north, to avoid immediate contact with the Manchurian frontier. The length of this most recently completed stretch of line is 1,213 miles. Before the Russian revolution took place there were important schemes to carry branch lines southward, to serve the gold-mining and agricultural regions in the south of Western Siberia, and to make good high roads as feeders ; and some of this work had been done. The Altai Railway had been completed to Barnaul and Semipalatinsk (514 miles), and construction was sanctioned from Achinsk to Minusinsk and elsewhere. But even without these, the trunk line has been of great importance in the economic development of Western Siberia.

When, by the wisdom and toleration of skilful and broad-minded statesmen, better relations have been established between Great Britain, Germany, Poland, Russia and America, a line from Antwerp to Vladivostock, under the League of Nations, will prove the greatest Peace factor in the world.

The Decomposition of the Great Russian Empire.

After the iniquitous and short-lived Treaty of Brest-Litovsk (March, 1918),* which had been forced on the Slav at the point

* By this Treaty, Russia lost 780,000 square kilometres (302,000 square miles) of territory ; 56,000,000 inhabitants ; 22,000 kilometres (13,750 miles) of railways ; and a revenue of 850,000,000 roubles (about £85,000,000).

of the German bayonet, the whole of the Russian Empire fell to pieces ; the disintegration of its various Provinces having been indirectly caused by the anarchy, brutality, and stupidity of the Soviet Government. Poland and Finland had already broken loose ; and these were quickly followed by the formation of the Ukrainian Republic, the Crimean Republic, the Don Cossack Republic, the Kuban Republic, and the Georgian Republic.

Never before in the world's history was there such an orgy of republicanism. Squalid tribes blossomed into "nationalities," families into hordes. The infection quickly spread to the Himālaya and the Great Wall of China. The Tekke Turkoman struck against taxes for his tents of felt ; the Samoyeds of the Tundras, who less resemble human beings than old hair mattresses with burst tops, compelled their Shamans to form a popular Duma ; the goat-nosed * Sart, the lousy † Bashkir, and the slit-eyed, flat-nosed Kalmuck, all shouted for joy in their new freedom and in the "world safe for democracy." Republics rose and fell in a week ; and Central Asia soon became as Israel, in those days when there was no king, and every man did that which was right in his own eyes.

Of the Republics which have survived, and which will probably form a Confederation, or groups, of Republics, later on, the following are the most important :—

The **Republic of Georgia**, situated in the broad isthmus between the Black and Caspian Seas. Its frontiers are not yet exactly delimited ; but its present area is about 45,000 square miles, and its population 3,400,000. The majority of the inhabitants are professing Christians. It holds the important harbour and port of Batoum, and the commanding position of *Tiflis*, the capital of the Republic. Tiflis commands the upper valley of the river Kura, and controls not only the most direct and easy routes between the Black and Caspian Seas, but also the fine military road which crosses the Dariel Pass (11,000 feet). There is also another excellent road starting from Batoum, and winding southwards, to Kars and Erivan ; and a branch-line, taking off at Tiflis, from the Batoum-Baku Railway, which goes to Julfa, on the Aras, and is to be continued on to Tabriz. The strategic position of Georgia for defence is stronger than that of any of its neighbours.

* *Herodotus*.

† Sir D. M. Wallace, *Russia*. "A person to whom a Russian applies this epithet must be particularly bad."

The **Azerbaijan Republic** stretches from the lofty Caucasus down to Persia, except where the Georgian wedge pushes in, and from the Caspian on the east to Armenia on the south-west. The great majority of the population is Mussulman. Its area is 50,000 square miles, and its population over 5,000,000. The capital is Baku, on the western coast of the Caspian Sea, from which enormous quantities of petroleum oil are sent by rail, or carried by pipes, to the port of Batoum on the Black Sea. This Republic has formed an alliance with Soviet Russia, and will no doubt adhere to its conditions just so long as they think that they are likely to gain anything by doing so. While Georgia holds fast to her roads and railways, and takes advantage of her splendid geographical position, on interior lines, she should have nothing to fear from Azerbaijan.

The **Armenian Republic** is south of the Georgian Republic, and west of Azerbaijan. Its area is 21,000 square miles, and its population 2,300,000. It was established, and recognised by the Great Powers, in 1920; its capital is Erivan. The only way in which this Republic will have any chance of preserving a continued existence is by an alliance with Georgia. But the Armenians consider themselves so very superior to the Georgians, that they would rather run the risk of extermination than take second place in such an alliance.

The **Republic of Bokhara**, north of the middle Amu Darya, consists of the old Russian vassal State of Bokhara. Its area is 85,000 square miles, and its population 2,500,000. It has lately entered into alliance with—

The **Turkestan Republic**, the greatest of all the Central Asian Republics, with an area of 400,000 square miles, and a population of over 8,000,000. This large State stretches from the Aral Sea, on the west, to the frontiers of the Chinese Republic, on the east; its boundaries north and south are not yet quite settled. Its capital is Tashkend, in direct communication, by rail, with European Russia. Though a large part of this State consists of desert and barren soil, yet it contains huge fertile tracts producing large quantities of cereals and fruit, growing and exporting excellent cotton, supporting great flocks of camels, cattle, and sheep, and horses innumerable. Near its eastern frontier, the Andijan district is said to be very rich in coal and oil.

Later on we shall very probably hear something about the military activity of the Turkestan Republic. It is at present

the resting-place of that stormy petrel, Enver Pasha, formerly the greatest and most powerful influence in the Ottoman Empire. But, by all accounts,* he has fallen on evil days ; and, in so far as Turkey is concerned, his sun is set. He was the principal supporter of the Treaty between the Turkestan Republic and the Soviet Government. Far from expressing gratitude towards his former instructors in the Science of War, it is said that he now heartily curses all Germans indiscriminately, devoutly praying that their faces may be blackened and the graves of their fathers defiled by yellow dogs.

There are other Republics which were formerly part of the Russian Empire in Asia, with which to deal at length would be only waste of time and space ; since these have not yet established anything that may be called a settled form of Government ; and, sooner or later, they are bound to form part of the coming Federation of Asiatic Republics, probably under the hegemony of China.

Holland.

The chapter in Colonel Repington's excellent work, *Imperial Strategy*, on "The Low Countries," leaves little to be said on the Military Geography of Holland that would not be merely a repetition of the words of this eminent author. But the Report of General van Mulken, formerly Dutch Minister of War, on the defensive system of Holland, of which a correct translation follows, will be found well worth the attention of the military student.

HOLLAND is mainly defended by inundations and river lines. These latter are called "lines of water" ; an expression which means inundations held by fortified dykes. In order that these lines may form a serious obstacle, they must be such that they cannot be either drained or turned. The fields of the country are cut by a number of small canals, so that a flooding of 2 or 3 feet depth will be sufficient to hide these canals, and make the flooded area absolutely impossible for military operations.

This arrangement, as we can understand, is all right for the defensive ; but it is not so good for the offensive ; besides, a number of detachments will be necessary to hold the dykes, which constitute so many defiles. Thus the army of defence will be divided up into a number of small weak bodies.

* *Turkestan Gazette.*

The country is covered over with old fortifications of little value.

In the reorganisation of the system of defence, which was undertaken thirty years ago, it was arranged that, in case of invasion, the country on the right bank of the Yssel and the left bank of the Maas (or Meuse) should not be defended, in order that the army might not be too much scattered ; and that the plan should be a central defence resting on the two strong positions of Utrecht and Amsterdam.

One great disadvantage in making defences in this country is the difficulty of obtaining good material for their construction ; and the spongy soil of Holland cannot well support deep and solid foundations. The fortifications which exist, as well as the dykes and other buildings, are supported by wooden piles and fascines ; and float, so to speak, on a shifting, boggy foundation.

On the east, the Yssel is the first line of defence ; but it is not easy to defend, on account of its length and the nature of its course. But it would be necessary for a defending army to hold it for some days at least, in order to give time to let in the inundations on the east of Utrecht ; and, on account of the losses which these inundations would cause, it is probable they would not be used until the very last moment.

The most important points to hold, first of all, would be Pannerden or Rheder, and Westervoort. Because, if at the beginning of the campaign, the enemy were to seize these points, he could, by means of dams, turn the greater part of the waters of the Rhine into the Yssel, and thus diminish considerably the inundations which might be prepared in front of Utrecht. Although the defence of the Yssel could not be of long duration, yet it could be made of some effect even by making use of the old fortresses of Zwolle, Zutphen and Doesburg ; and the right could be defended by the forts of Lent and Kraijenhof, near Nymegen.

The first " line of water " which is, in reality, a second line of defence, is about 30 miles behind the Yssel. It is the line of the Grebbe, or what is called the Gelderland Valley ; with its right resting on the little fortress of Ochten, on the Waal ; its left on the fort of Spes, on the lower Rhine ; and it is traced by the little stream of the Grebbe, which runs into the Rhine, and the Eem, which runs into the Zuyder Zee. This line is not very strong. Its most important point is Amersfoort, at the junction of the railway lines from Zwolle and Zutphen.

The strongest defence of Holland is the " New Holland Waterline " (*Nieuwe Hollandsche Waterline*). It runs from the forts of Naarden and Muiden, on the Zuyder Zee, by the Uecht,

to Utrecht, then on to the fortifications of Ureswyk on the Lek. The sea can be utilised to inundate this line. And this line is continued to Asperen, on the Linge; and is strongly defended on the right flank by the forts of Gorinchem (or Gorkum), Woudrichem, Lowerstein (in the island of Bommel), Steurgat (at the entrance of Biesbosch), and Giessen, south of Woudrichem. The breadth of the inundation would be about 2,500 yards in front of Utrecht.

As the waters of the Lek would be used for the inundations, the positions holding the line of this river, Westervoort and Arnheim, are of the greatest importance. Letting in seawater for the inundation would be the very last resort; as it would have the effect of making the land barren for a number of years afterwards.

UTRECHT is the centre of the defence. It is surrounded by a number of detached forts, strong and well-placed. It is at the junction of the four most important railway lines of Holland. Between Utrecht and Muiden the most important position is Nieuwersluis; between Utrecht and the Lek the most important point is the fort of Jutphaas. But, in addition to these, there are numerous forts and redoubts for the defence of the different main roads which lead into this part of Holland. It would take 4 or 5 days to inundate the first waterline to a depth of 6 feet.

The next strong position for defence is AMSTERDAM. It is surrounded by a line of inundation, forts and batteries. This line goes by Muiden, Weesp, Haarlem, Velsen, Uitgeest and Edam on the Zuyder Zee. It could be inundated in 24 hours. There is a large canal from Amsterdam to the Vecht, by which vessels of war can pass down to the very estuary of the Maas.

The southern front of Holland is not quite so much threatened as the east. That is, it is not so much exposed to an offensive on the part of Germany. Yet the obstacles in this direction are numerous and difficult. In the case of attack, as I have already mentioned, the provinces of Limburg and North Brabant would be given up; and possibly Zeeland, with the exception of a few strong forts; the Maas would be taken up as a first line of defence. An enemy attacking from this direction would have to get across the three lines of the Maas, the Waal and the Lower Rhine. If he tried to turn the position on the west, he would find the operation still more difficult. The line would be defended by the forts of Crevecœur and Neusden, several detached forts and batteries, resting on the Biesbosch and the fortress of Gertuidenburg.

If the enemy were to try to turn this line by moving more to the west, he would be met by the Hollandshe Diep and the

Haringfliet. These are defended by Willemstad, with three strong forts. The coast here is defended by Brielle and Helvoetsluys, commanding the only two estuaries which allow the passage of large men-of-war; and the two places are connected by a defended dyke armed with eleven batteries. The other forts in this direction are Tholen, Bergen-op-Zoom, Goes, Middleburg, Flushing, Ysendyk and Fort Lillo, commanding the entrance to the Scheldt.

To the north, the position Helder-Nieuwediep commands the Marsdiep, the only entrance by which large vessels can pass into the Zuyder Zee; the straits between the other islands are too shallow.

If the enemy once become master of the Helder, his fleet could enter the Zuyder Zee; cut all communications between the eastern provinces and Utrecht; blockade Amsterdam, and push in his siege material by the North Holland Canal; from which it may be seen how very important it is for Holland to hold the Helder strongly. On the land side the Helder is defended by four strong forts. On the sea side, it is defended by a strong line of forts and five batteries. The garrison necessary to hold the place is reckoned at about 7,000 men. The island of Penel is fortified.

The Dutch army is about 30,000 men in peace time, and 66,000 on a war footing. This is the regular army; but, with the reserves, it might be brought up to 112,000. The military centres are: Utrecht, Naarden, Gorinchem, Zwolle, Dordrecht, Helder, Amsterdam and Hertogenbosch.

Belgium.

In so far as the interests of the British Empire are concerned, the Military Geography of Belgium is included in one word—*Antwerp*.

Admiral Mahan has pointed out that there are always dominant positions, outside the frontiers of a maritime State, which, in the interests of commerce as well as of supremacy at sea, should never be allowed to pass into the possession of a powerful neighbour. England, always dependent on the narrow seas, has long been familiar with the importance of such positions, of which the nearest and most important is Antwerp, only 180 miles from London.

Speaking of its very advantageous geographical position, the historian Alison says: "Nature has framed the Scheldt to be a rival of the Thames. Flowing through a country excelling

even the midland counties of England in wealth and resources, adjoining cities equal to any in Europe in arts and commerce ; the artery at once of Flanders and Holland, of Brabant and Luxembourg, it is fitted to be the great organ of communication between the fertile fields and the rich manufacturing towns of the Low Countries and the other maritime States of the world. It is the point from which in every age the independence of the Low Countries has been seriously menaced. Sensible of her danger, it has been the fixed policy of Great Britain for centuries to prevent this formidable outwork from falling into the hands of her enemies ; and the best days of her history are chiefly occupied with the struggle to ward off such a disaster."

Although times and conditions have changed since Alison wrote this, and though his last sentence about " the best days " of British history might be now considerably modified, still the importance of Antwerp is as great to-day as when Charles II. tried to protect it from the French (1670) ; when even the phlegmatic Queen Anne fought France for it (1704) ; when, to save it, Chatham supported Prussia (1742) ; and when Pitt declared war against the First Republic (1793).

Again, with reference to Antwerp during the Napoleonic Wars, Henderson says : " The great dockyard that the Emperor had constructed on the Scheldt held the nucleus of a powerful fleet. Eight line-of-battle ships and ten frigates lay in mid-channel. Twenty vessels of different classes were on the slips, and in the magazines and storehouses had been accumulated sufficient material to equip all these and twenty more. The destruction of Antwerp would have freed scores of British frigates to protect British commerce ; Wellington, in his great campaign of 1813, would not have had to complain that, for the first time, the communication by sea of a British army was insecure ; the Americans, in the war which broke out in 1812, would have been more vigorously opposed ; and Napoleon, who, while Antwerp was his, never altogether abandoned hope of overmastering Britain on her own element, might, on his own confession, have relinquished the useless struggle with the great Sea Power."

But although the commander of the British Expedition (1809) had had Antwerp at his mercy for a whole week, the expedition failed, and failed disastrously. Still, fulfilling, as it did, the great maxim that the naval strength of the enemy should be the first objective of the forces of the maritime Power,

both by land and sea, it was a strategic stroke of the highest order.

On the outbreak of the Great War in 1914 there was only one English statesman who seems to have fully appreciated the importance of Antwerp, and that was Mr. Winston Churchill. Endowed as he is with a clear and correct military instinct, and a profound knowledge of Imperial Strategy and History, he even attempted to take a personal share in the defence of the threatened city. But he lacked the necessary support of those colleagues of his with whom a knowledge of Strategy and History is rated far lower than Political Tactics and Rhetoric.

For the ease with which Antwerp fell to the German attack the Belgian military authorities themselves are in a great measure to blame. They seem to have taken no care to keep the defences of Antwerp up to date; and some of their guns in the citadel had been in the same place since the year 1862 !

CHAPTER VI

AFRICA

As the political changes which have been made in the continent of Africa by the Treaty of Versailles have been already discussed in detail in the previous pages, it will be well to deal with Africa here as it was before these changes took place. As an exercise in mapping, and to fix the distances in the mind of the student, the following hints will be found useful in drawing a map of Africa.

Lay down a horizontal line LM. At a point X in it draw a line XY, above it, towards the left, $4\frac{1}{2}$ inches long, making an angle of 18° with it. On XY describe an equilateral triangle, XYZ. Each side of this triangle will represent 2,600 miles, and the angular points will give the positions of Mombasa, Lagos and Port Said. A railway from Mombasa to Port Florence connects the Indian Ocean with Lake Victoria Nyanza. The Mombasa-Lagos line passes over Mount Kilima Njaro, the lower part of Lake Victoria Nyanza, the equator at Stanley Falls (on the Congo), the German Kameroons and Calabar in Southern Nigeria. If this line be produced for 2 inches on the left of LAGOS, it will meet the Atlantic coast at the small port of Cacheo on the boundary between French and Portuguese territory, and south of the British port, BATHURST. The Lagos-Port Said line crosses the river NIGER near BIDA, passes by the north-east of Lake Tchad, enters Egypt at the twentieth parallel north, and passes through CAIRO. The Mombasa-Port Said line passes through the west of Abyssinia, approaches the NILE near BERBER, and passes through SUEZ. If a line, equal in length to XY (2,600 miles), be drawn from LAGOS, making an angle of 55° with XY, it will pass through WALFISCH BAY. A line $3\frac{3}{4}$ inches long, making an angle of 55° with YZ, gives us TANGIER, and represents 2,200 miles, which is also the distance, in a straight line, from Tangier to Port Said. CAPE TOWN is

the same distance from the mouth of the Orange River, on the south, that WALFISCH BAY is on the north; and a line connecting CAPE TOWN with MOMBASA is 2,600 miles long. BULAWAYO is just about on the middle of this line; it crosses the Zambesi east of ZUMBO, and nearly bisects LAKE NYASSA. The production of this CAPE TOWN-MOMBASA line for 2 inches will give us CAPE GUARDAFUI, 1,400 miles from MOMBASA and 2,000 miles from PORT SAID. From CAPE GUARDAFUI west to CAPE VERDE (the most westerly point in Africa) is $6\frac{3}{4}$ inches; Cape Verde is 1,500 miles, in a straight line, from LAGOS, and 1,800 from TANGIER. One-quarter of the way up from MOMBASA to CAPE GUARDAFUI is JUBA, just on the boundary between BRITISH EAST AFRICA and SOMALILAND (not British Somaliland). A perpendicular from JUBA $1\frac{1}{2}$ inches long, will give JIBUTI and the Straits of BABELMANDEB. If, with the Mombasa-Cape Town line as base, an isosceles triangle be described on the left, each side $2\frac{1}{4}$ inches long, we get, as vertex of the triangle, the point where the Tropic of Capricorn meets the coast of Portuguese territory, north of Cape Corrientes. The line joining this point to Mombasa passes through the mouth of the Zambesi and ZANZIBAR Island. The only part of Africa which does not come under the rule of some European State is ABYSSINIA. Abyssinia consists of four provinces, Tigré, Amhara, Godjam and Shoa, situated in this order from north to south. The area of Abyssinia is 300,000 square miles, and its population 5,000,000. Its boundaries are not well defined. At $14^{\circ} 20' N.$, and $36^{\circ} 40' E.$ the river SETIT, a branch of the ATBARA, forms the boundary between it and Italian territory (ERITREA); from this point the boundary runs south-south-west to meet the thirty-sixth meridian at $12^{\circ} 40' N.$; then south-west, cutting the thirty-fifth meridian at $11^{\circ} 20' N.$ The capital of Abyssinia is ADIS ABABA, about 500 miles from the port of ZAILA, *via* HARRAR.

Abyssinia is the only country on the African Continent which has been able to maintain its independence against the land-hunger and lust of conquest from which European nations suffered during the half-century immediately before the Great War. Geographically and politically, Abyssinia is to Egypt as, in Asia, Afghanistan is to the plains of the Punjab, and, in Europe, on a smaller scale, what Switzerland is to the valley of the river Po. It represents all that remains of the great

Ethiopian Empire, which possessed flourishing and wealthy ports on the Indian Ocean and the Red Sea; which stretched from the Nile, on the north, to the fabulous "Mountains of the Moon" on the south; the old maps of its western frontier being marked with the legend "*Hinc sunt leones.*" Abyssinia is much smaller now than it was sixty years ago, and it is cut off from all communications with the sea. The majority of the inhabitants profess a primitive form of Christianity; and, for more than twelve centuries, have successfully resisted all attempts to convert them to the faith of Islam.

About sixty years ago, the King (or *negūs*) of Abyssinia, Theodore, experienced great difficulty in dealing successfully with a few rebellious chiefs in the north-west of his kingdom, and with inroads made by the Egyptian Arabs, who raided the borders, for ivory, gold-dust, cattle and slaves. As one Christian ruler to another, it occurred to him to appeal to Queen Victoria for assistance. After waiting for some time without receiving a reply, nor even an acknowledgment of his letter, he became angry at being treated with such scant courtesy; and, in revenge, he imprisoned the British subjects who were in his territory. Upon which a British army, under General Sir Robert Napier, invaded Abyssinia, landing at Annesley Bay, south of Massowah, on the west coast of the Red Sea. After a wonderful march of 400 miles through very difficult country, Napier reached the King's capital, Magdala, and attacked the Abyssinian force defending it. The Abyssinians were defeated with a loss of about 4,000 in killed and wounded; and Theodore, after signing an order for the immediate release of the British captives, committed suicide. After the English force was withdrawn, the country broke up into a number of petty states; and anarchy was rampant until something like order was restored by the next King, John. When he was killed in repelling an attack by the Dervishes, the "Emperor" Menelik became ruler of Abyssinia. Menelik was very favourably disposed towards the British; and they supported his claim to the harbour and district of Massowah. But, a short time before, Italy had established a few trading depots more to the south, at Assab*; and suddenly the Italian Government claimed the whole of that part of the Red Sea coast, as far north as Ras Kasar, as its sphere of influence. In this crisis Menelik acted

* This place was bought by an Italian trading company in 1870, and transferred to the State in 1882.

with moderation and prudence. He appealed to England and France to arbitrate between himself and Italy, and he quietly assembled his military forces behind the northern frontiers. Neither France nor England was willing to move in the matter ; and an Italian army marched into Abyssinia (1896). The Italian commander, Baratieri, and his staff, were absolutely ignorant of the Military Geography of the country they were so gaily invading. Menelik met them near Adowa ; and, by means of tactics exactly similar to those of Moreau at Hohenlinden, he smashed each column of the Italians before the others could come to its assistance. The Italian force was practically exterminated ; and Italy had reason to be glad that the weakest point of half-savage armies is an inability to follow up and take full advantage of their victories. Since then the European nations have cherished great respect for Abyssinia ; though Abyssinia, on her part, neither trusts them nor loves them.

Ten years after the Italian defeat, that is, in 1906, Great Britain, France and Italy came to amicable arrangements with Abyssinia on the question of frontiers, and pledged themselves to uphold the integrity and independence of Menelik's dominions.

During the Great War, a number of Germans, Austrians and Greeks, in various parts of Abyssinia, were very diligent in spreading German propaganda in Arabia, Egypt and the Soudan. They also managed on two or three occasions, to convey money, provisions and munitions of war across the Red Sea, from the little port of Assab, to assist the Turkish force which, under Said Pasha, was fighting against the British force in Aden. After the defeat of the German East African force, a number of the *askaris* (native soldiers) made their way into Abyssinia, where some of them are now employed as drill and musketry instructors in the army.

An invading force would find it a much harder task to carry out a long march through Abyssinia now than Napier's force found it in 1868 ; and the easiest lines of invasion would be from the Egyptian Soudan, on the north-west ; or, by the French railway and road, from the port of Jibutil, on the east, to the capital, Adis Ababa. In all other directions, the surface of the country consists of a series of steep terraces, rising abruptly from the plains to rugged and rocky plateaux between 5,000 and 8,000 feet high ; then a chaos of mountain ridges nearly as high as the Pennine Alps.

In the higher regions the climate is healthy ; but the rainfall

between June and September is often as much as 60 inches. The higher valleys are rich in grain, fruits, cattle, sheep and goats; the horses, though small, are hardy and sure-footed; but there are no roads for wheeled traffic, and the routes through the mountain regions are only known to the natives of those parts.

Morocco contains about 300,000 square miles, and a population of about 6,000,000. Its chief ports are TETUAN, TANGIER, El Ardish, Rabat, Agadir, Casa Blanca, Mazagan and Mogador. FEZ, with a population of 120,000, is the capital; the other inland towns are Morocco and Mequinez. Tangier is 1,200 miles from Southampton, but can be reached by train (Sud Express) and boat in three days. The other French possessions in Africa are: Algeria, capital ALGIERS, an important coaling station; also Oran, Constantine, Bone and Tlemgen. TUNIS is nominally under the Bey of Tunis, but in reality under French control and administration. TUNIS, the capital, is connected with the sea by a canal. BISERTA, MONASTIR and SFAX are the principal ports. TRIPOLI belongs to Italy. At CAPE BLANCO (21° N. and 16° W.) the French Colony of Senegal begins, and extends to the mouth of the Gambia, 14° N., the principal towns in it being ST. LOUIS and DAKAR. A railway connects these two towns; and another railway runs from KEYES on the Senegal to KULIKORO on the Niger. Then we get to the British Colony of Gambia, capital BATHURST; then, again, into French territory as far as Cape Roxo; then Portuguese territory, including the Bissagos Islands, as far as the mouth of the KOGON River, capital CACHEO; French territory again, capital KONA-KRI; British Colony, SIERRA LEONE, capital FREETOWN; LIBERIA, an independent Negro Republic, capital MONROVIA; the IVORY COAST (French), capital ASSINIE; GOLD COAST (British), capital CAPE COAST CASTLE; German Colony, TOGOLAND, capital LOME; DAHOMEY (French), capital PORTO NOVO; LAGOS and NIGERIA (British), capitals LAGOS and CALABAR; KAMEROON (German), capital DULA; FRENCH CONGO, capital MYAMBA; a small strip of CONGO FREE STATE; ANGOLA (Portuguese), capital ST. PAUL DE LOANDA; German South-West Africa, capital WINDHOEK; Cape Colony. The Portuguese territory on the east coast extends from Inyack Island to Cape Delgado; and from the Juba River to Cape Guardafui is under the protection of Italy.

Beginning in the north-west, on the Atlantic seaboard : From Cape Bajador to Cape Blanco, about 500 miles, is under Spanish protection ; it is called Rio d'Oro. Then we come to : Senegal, French ; Gambia, British ; Portuguese Guinea ; Sierra Leone, British ; Liberia, Independent ; Ivory Coast, French ; Gold Coast Colony, including the protectorate of Ashanti, British ; Togo Land, German ; Porto Novo, including the protectorate of Dahomey, French ; Lagos, including the protectorate of Yaruba, British ; Nigeria, British ; Kamerouns, German ; French Congo ; Congo Free State, Belgian ; Portuguese West Africa ; German South-West Africa. Great Britain owns Walfisch Bay, and a number of small islands off the coast, such as Ichaboe, Mercury, etc. Cape Colony, British.

On the east coast they followed in this order : British South Africa ; Portuguese East Africa ; capital Lorenzo Marques. German East Africa ; capital Dar-es-Salaam. British East Africa ; capital Mombasa. Italian East Africa (part of the Somali coast, separated from British East Africa by the Juba River, and part of the Red Sea Coast) ; capital Massowah. British Somaliland ; capitals Berbera and Zeila ; French Somaliland ; capitals Obok and Jibuti.

On the Mediterranean seaboard are Egypt, Tripoli, Tunis, Algeria, Morocco.

The events which took place in Morocco in the first decade of the twentieth century—especially the “Agadir Affair,” and the *coup manqué* of the German gunboat *Panther*—formed the overture to the tragedy of the Great War. Therefore some knowledge of the geography of Morocco is desirable.

Morocco is the most western of what Europeans call the Barbary States. It extends for 800 miles along the Atlantic coast, on the north-west of Africa, from the small seaport of Surra to Cape Spartel ; then for 200 miles more to the east, along the Mediterranean coast, to opposite the Zafarines Islands, which belong to Spain.

What is called the “empire” consists of the kingdoms of Fez and Morocco, and the territories of Sus (between the Atlas and the Anti-Atlas) ; Draha, in the middle ; and Tafilet, south-east. What is called the Tell district is just to the south of the Mediterranean coast ; and between this district and the sea there is a mountainous strip called El Rif.

After the capital, Fez, the large towns are : Morocco, near

the centre, and direct east of the port of Mogador ; population 50,000 ; and Mequinez, 56,000, on the trade-route from Fez to the port of Salee, and 36 miles west of Fez. The principal seaports are Mogador, Dar-al-Beida (or Casa Blanca), Mazagan, Rabat and Tangier, all on the Atlantic ; Tetuan, on the Mediterranean.

Tangier, the best known of these, has a population of about 40,000. The following places on the Morocco coast belong to Spain : Ifni, Ceuta, Penon Devez Islands and Melilla. The principal rivers are the Sebu, Muluya and Umm Rabi.

In 1904, France, Spain and Great Britain agreed not to permit, nor to undertake, the construction of fortifications on the Moorish coast between Melilla and the mouth of the river Sebu, excepting the places (already mentioned) occupied by Spain.

The trade of Morocco is chiefly with Great Britain, France and Germany. The country is capable of producing enormous quantities of wheat : it is also rich in minerals, but this industry is undeveloped.

The principal mountains are the Atlas ranges, consisting of a chain of parallel rugged ridges 400 miles long ; the highest peaks being Jebel Ayashin, or Magran, 12,000 feet ; and Jebel Tiza, 11,000 feet.

A French railway from Oran runs down to the Moroccan frontier, near Figig. There are two cables from Tangier, one to Tarifa, the other to Gibraltar.

Further information about the Military Geography of various parts of Africa will be found in the Answers to the *Examination Papers* at the end of this book.

CHAPTER VII

THE MIDDLE EAST

THE "Middle East" is the name which by common consent is applied to Asiatic Turkey, Persia, Baluchistan and Afghanistan; often including Arabia, Syria and Egypt.

There is no doubt whatever that in the near future the fate of empires will be decided in this part of the world; and England herself will have to fight, tooth and nail, to prevent a huge hostile wedge being pushed in between Europe and the British possessions in the East. The Persian and Turkish railways are not being built there for nothing. When the storm bursts, the Indian army will be required for India, and will be none too little for it; so that troops for fighting in the Middle East will have to be drawn from home and the colonies. The Lion and the Bolshevist animal are not going to lie down side by side peaceably on the Persian Plateau; and when the time comes the want of preparedness will not be on the side of the Slav.

And as one essential part of the preparation is a study of the geography of the country, it would be well for the military officer to acquire a correct knowledge of this part of the world.

Persia (written in 1908).

Persia is generally supposed to be an independent Asiatic State, lying between Turkey and Afghanistan; occupying the western portion of what is called the Iranian Plateau. Its area is 628,000 square miles, about five times as large as the British Islands, or six times as large as the Punjab. The population is about 9,000,000; of whom nearly 2,000,000 are nomads, consisting chiefly of Turks, Kurds, Arabs and Lurs.

The Shah is the autocratic ruler, and he carries on his

government through a cabinet of twelve responsible ministers and several irresponsible ones.

The country is divided into 33 provinces, under Governors-General, the Hakims, who, with the chief judges of the cities, the Sheikhs-ul-Islam, administer what they call justice and superintend the collection of the revenue. The nomad tribes are ruled more or less by their own chiefs; and these chiefs are held responsible for the revenue from the tribes.

The Mohammedan priests have great power and influence in the country: they own many colleges, but for religious instruction only; which partly accounts for the backward state of the people and the country.

Persia is a huge plateau, bounded on the north, west and south by lofty mountains. On the east, towards the Afghan Frontier, is the great Luth Desert, a barren and sandy depression. The most fertile tract in the whole country is a strip about 300 miles long and 10 or 12 miles broad, which stretches between the Southern Caspian and the Elburz Mountains. The only navigable river is the Karun.

The principal towns are:—

TEHERAN, with a population of over 200,000. It is the capital; it stands at the foot of the Elburz Mountains, and the country all round is very fertile. Most of the trade-routes meet here; but, the city itself being nearly 4,000 feet above the sea-level, it will be found difficult to build railways to it. Its position gives it a strategic importance; it is fortified with outlying towers and walls. But from a commercial or strategical point of view, it is not at all so important as TABRIZ,* a city on the Armenian plateau, the centre of all the North Persian trade with Europe, the route going from here by way of Trebizond. Owing to its position it is a tempting bait to the cupidity of Russia.

The principal centre of trade in the north-east of Persia is MESHED, the capital of the Province of Khorassan, with 60,000 inhabitants, on the great trade-route to Russian Turkestan. It is near the frontiers both of Russia and Afghanistan, and convenient for the Trans-Caspian Railway.

North of the Elburz Mountains, the chief centres of the Caspian trade with Russian ports are RESHT and BALFURUSH, both situated a few miles from the coast. The bay of Enzelli

* Now the capital of the Azerbaijan Republic, in alliance with the Bolsheviks.

is the harbour of Resht. These last three places are entirely under Russian influence.

In the country to the south of Teheran, the four towns of HAMADAN, ISPAHAN, YEZD and KERMÁN succeed one another at intervals of about 160 to 200 miles, on lines nearly parallel to the trend of the south-western mountains.

Ispahan was the former capital of Persia. It is situated on the Zendeh-Rud. Lying as it does on the direct line of invasion from Central Asia, it has suffered much, and its glories are departed. To the south is SHIRAZ, a great trading centre, with 30,000 inhabitants.

In that part of Persia to which these five towns belong, the trade some years ago was almost entirely in British and British-Indian hands. The routes by which it was chiefly carried on were those leading to the seaports of BUNDER ABBAS or GOMBROON, LINGAH and BUSHIRE, on the Persian Gulf, and the Turkish towns of Baghdad and Bassora, on the Tigris.

Of these towns, Bunder Abbas is situated at the entrance to the Gulf, opposite the small island of Ormuz. Lingah is about 100 miles further west; and Bushire is on the east side of the Gulf, to the south-west of Shiraz. The only other Persian port that need be mentioned is MOHAMMERA, on a short channel which connects the Shat-el-Arab with the Karun River. BAL-FURUSH is a port on the Caspian connected by rail with Amol, and MESHED-I-SAR, with a population of 50,000: the most thriving trading-town on the Caspian coast.

The population in the southern parts of Persia belong mostly to the Aryan stock; but more to the north they are Turanians. This question of nationality, as well as geographical causes, may account for Russian influence in North Persia and British influence in the south.

The Persians are polite and intelligent; but they are also cunning, deceitful, cowardly; outrageous liars, and frightfully immoral.

Persia lies on the road of a flank or rear attack against both Turkey and Afghanistan. The Government, corrupt in every department, the insubordination and poverty of a great portion of the population, the absence of a reliable political organisation, and the debility of the administration, allow of no manifestation of force by Persia. The very heterogeneous

and ignorant people are convinced of the immense power of Russia.

The Persian army is in a most deplorable condition. Out of 80 battalions 23 are always embodied ; but these hardly ever carry out any military exercises ; are for the most part employed on police duties, and have a very low strength. The armament is the Austrian Werndl rifle of 1877 ; but the supply of these is mostly in store, so the provincial battalions are armed with old muzzle-loaders. Target practice has not been carried out for years.

The cavalry consists of the so-called "Cossack" brigade of mounted troops, organised on the Russian model, and of 125 irregular regiments, raised among the nomad population. In peace time there is no provision made for their mobilisation ; and only "Life Guards" of the Shah, numbering 1,500, actually serve.

The artillery is broken up, according to guns, into small detachments. There are about 150 breech-loaders, mostly 7, 8 and 9 centimetre guns, and 100 rifled muzzle-loaders, with 1,000 smooth bores of various calibres. Only six batteries in Teheran are horsed. Artillery practice is never carried out.

Technical, Medical, and Train troops are entirely wanting. The factories for ammunition have recently ceased to exist. The training of the troops is managed by a Corps of Instructors formed by the Austrian Military Mission between 1878 and 1881. The remaining officers' commissions are held by men who were never trained to the work, and who only think of drawing their pay.

The levying of recruits is carried out by privates detailed for this duty. As the commanding officers alone have to see to the strength and fitness for service of their men, and are never controlled in this, so there exists the greatest corruption. Pay is very small and often in arrears. The men chiefly make both ends meet by additional earnings, as coolies and labourers. The bulk of the War Budget consists of pensions. All these circumstances render any effective military action on the part of Persia most improbable. Russian officers have calculated that 10,000 Russian troops would be quite sufficient to deal with the whole Persian army of 115,000 men.

From the troops just described an exception must be made in favour of the "Cossack" brigade, organised by Russian officers in 1879. In 1899 this was converted into a detachment of all arms, under the command of Russian officers ; it consists

of 4 regiments and 2 horse-batteries of 4 guns each. This force numbers 1,500 rank and file with 200 officers. The regiments are composed of mounted and dismounted men; the proportion of the two depending on the supply of horses, which varies considerably. It is recruited by voluntary enlistment of Tartars, Kurds and Turks; rarely of Persians. Training is carried out according to Russian regulations. The uniforms and equipment are of Russian pattern. The discipline of these troops leaves something to be desired. On the other hand, the Shah can rely on them because they are regularly and liberally paid, whereas the other troops are treated in the reverse fashion. After the murder of Shah Musaffer-ed-Din, in 1896, they maintained public order in Teheran; they supply detachments for Tabriz, Meshed, Kerman, and also do police work. The Russian commandant and instructors are not, however, subordinate to the Persian War Office, but to the Russian Ambassador in Teheran (1908). The officers are said to have a very high and secure position at the Shah's court. The institution of this corps should be considered of greater importance as a symptom of Russian influence than as a military body; and may be taken as a gauge of the close understanding subsisting between the two States, and of the great preponderance of Russia. Quite recently, it is said, the Shah has consented to further Persian troops being reorganised and trained by Russian officers.

This Russian influence prepares the way for Russian troops through Persia, and facilitates an advance past Herat. And in this respect the Persian province of Seistan plays an important part. A Russian force stationed there would command Western Afghanistan and Herat, by means of the roads radiating from Nasirabad along the watercourses towards South-West Afghanistan. Whilst the march from Khushk through Herat and Farah to Kandahar measures 420 miles, from the frontier of Seistan to Kandahar is only a distance of 240 miles. A railway to Nasirabad, and the occupation of Seistan, would shorten the Russian advance by 180 miles. Now a Russian advance in strong force from the present frontier, by the way of Herat, Farah and Kandahar, by reason of the necessities of the communications, meets with obstacles almost insurmountable for the supplies of the operating force; but the Nasirabad line would reduce these difficulties considerably.*

* During the war, the Nushki branch of the Quetta railway was extended to Seistan.

The British side of the question.

From Quetta the British keep a firm hold on Baluchistan, so as to reach Seistan, and thence to establish communication with the ports of the Persian Gulf. They therefore instituted a railway and caravan route from Quetta *via* Nushki, across the deserts, along the South Afghan frontier, through Nasirabad to Birjand; this route is supplied with wells, and guarded by small posts of British troops. During the past few years, the railway which had formerly ended at Quetta was continued to Nushki; and an eventual extension through Seistan and South Persia was repeatedly mentioned by Lord Curzon.* By means of this line of communication, British trade, which suffered greatly owing to the construction of the Trans-Caspian Railway, and had vanished almost entirely from North Persia, is to be revived, and British influence in Persia is again to be increased. Such a railway would greatly hinder Russia's advance towards the Persian Gulf. Also Seistan, which is easily accessible from the sea as well as by such a railway, lies on the flank of a Russian advance through West and South-West Afghanistan. From there British troops could well threaten the flank and rear of a Russian advance directed through Farah and Girishk; Russia would thus be forced to secure South Persia, and especially Seistan, before attempting such an advance. Now in South Persia England relies on her all-powerful sea communications, since she monopolises the sea-trade of Persia, which passes chiefly through Bunder Abbas, and thus possesses a reserve of maritime power for her fleet. British politicians have repeatedly stated that the Persian Gulf must be a British sea, and that no foreign sea-power can be admitted into it. In order to acquire secure bases for her fleet along these coasts, England obtained possession of the large island of Kishm, which lies opposite Bunder Abbas, at the end of the 'nineties; and then, later on, installed a marine depot at Muscat on the Arabian coast. This position, owing to the difficulty of the hinterland for the movement of Russian troops, is one which cannot be easily contested.

The trade of Persia is being continually more and more attracted by the Caucasian and the Central Asian railways. If Russia gained the southern coast of Persia, she would command a considerable portion of the sea-trade of the Persian and

* It is now (1921) being carried out.

neighbouring coasts, and her power and resources by sea would be thereby increased. Each step in advance of the authority and prestige of Russia means a proportional weakening of the position of her rival, England, in those parts. And if Russia were to be the dominant power west of the Indus and on the Indian Ocean, more enemies would be certain to rise against England in Asia.

The recent institution of a Persian "Parliament" is a stupid farce, and foredoomed to failure. The Oriental wants no Parliaments; by his very nature he is unfit either to use or to appreciate such popular institutions; and any artificial attempt to force them on him is futile. The short-lived Turkish Parliament of 1875, even under the distinguished patronage of the Great Powers of Europe, was the laughing-stock of the civilised world.

Mesopotamia.

The most important isthmus on the map or in the history of the world is the tract of land, 450 miles broad, which connects Asia with Europe, between the Persian Gulf and the Caspian Sea. Through the middle of this isthmus a ridge of mountains runs from the south-east to the north-west, for 1,000 miles, until it joins the main ridge of the Eurasian continent running west and east from the Pyrenees to the Himālaya. This ridge forms the watershed between the rivers flowing into the Caspian Sea and those flowing into the Persian Gulf; and it rises to heights of 12,000 feet, north-west of Shiraz; 14,000 feet, on the west of Ispahan; and 10,000 feet, south-west of Lake Urumiah. The principal crossings over this range are: (1) Kotal Pirizan, on the way from Bushire to Shiraz, and the Kuli-Kush Pass, on the way from Shiraz to Ispahan; (2) the Gardan-i-Zirreh, on the way leading from Ahwaz and the Karun basin to Ispahan; (3) the Takht-i-Girreh, between Khanikin and Kermanshah; (4) and the Kalleh Shin Pass, on the way from Mosul to Tabriz. Between (2) and (3) lies the country of the Bakhtiaris, the most turbulent, treacherous and cruel of all the wild tribes of the Middle East. To the west and south-west of this range, stretching away to the mountains of Syria, we have the Mesopotamian Plain and the North Arabian Desert, with a breadth of 600 miles between Baghdad and Aleppo.

The river Tigris, on the east, rushes down from Diarbekir to Mosul; its source being quite close to the valley of the Upper

Euphrates, here called the Kara Su (dark water); from Mosul to Baghdad, the current is not so swift; and then from Baghdad down to Kurna, where it joins the Euphrates to form the Shatt-ul-Arab, its course is tortuous and sluggish, except when it suddenly gets into a bad temper, rising 20 feet in one night, stranding the Arab sailing boats (*safeena*) on the sandy plains each side of its banks, where they remain until—"inshalla" *—another flood comes to lift them off, and they perchance happen on the main stream again.

The source of the Euphrates is near Mount Ararat. It first runs direct west, then makes a loop to the east, south and west again; then runs generally south-east till it joins the Tigris near Kurna. The Euphrates is 1,800 miles long, and the Tigris 1,200.

From Kurna to Fao, on the Persian Gulf, is 100 miles; and Basra, on the western bank of the Shatt-ul-Arab, is very nearly half-way between these two places. Sixty miles north of Kurna is Amara, on the left bank of the Tigris. If with Amara as centre, and a line 100 miles long as radius, we describe a circle to represent the disc of a clock, we get Ahwaz at 3.30, Basra at 5.30, the battlefield of Nasiriyeh at 7.30, and Kut at 10.30. Ahwaz is 70 miles up the Karun River from Mohammera, and 110 from Fao. The pipe-line of the Anglo-Persian Oil Company begins at the Shuster Oil Fields, nearly 50 miles north of Ahwaz, and runs along the eastern side of the Karun to Wais, where another pipe-line joins it from the east; then it goes on south through Ahwaz, Nasrie, Ali-bin-Hussein, and Sabla, to Mohammera, but always keeping on the eastern side of the Karun. The Anglo-Indian telegraph line, from the cable station of Fao, goes through Mohammerah; and, passing along the western side of the Karun, crosses this river at Ahwaz; then goes through Shuster, Dizful, Hamadan, Teheran, Tabriz, to Julfa on the Russian frontier.

Our radius of 100 miles will again give us the distance between Kut and Baghdad; and 25 miles south-east of Baghdad we have the battlefield of Ctesiphon. Fifty miles south of Baghdad is the holy city of Kerbela and the ruins of Babylon.

When Turkey was so ill-advised as to declare war against the best friend she ever had since she came into Europe from

* "If God wills": an expression always in the mouth of the Mesopotamian Arab.

Asia, it became strategically and politically necessary for Great Britain to seize the district of the Shatt-ul-Arab : (1) to protect the great oil-field, one of the chief sources of oil supply to the British navy, (2) and to cover India from any attack delivered by way of Persia and the Persian Gulf.

The Mesopotamian Campaign was begun like the East African Campaign ; but, for a time, it had better luck. A handful of troops from Bombay defeated a small body of Turks who held a position on the right bank of the Shatt-ul-Arab, Saniyeh, 10 miles south of Mohammerah ; and, following up, occupied Basra, on November 22, 1914. Then an attack in insufficient strength was made on Kurna. It was beaten back ; but this place fell to a better-prepared attack in December. Now more troops were despatched from India : the British moved up the Tigris and captured Amara, in April 1915. In the meantime a mixed Turco-Arab force had been defeated at Nasiriyeh, on the Euphrates, and it was decided to occupy Kut. That gallant and experienced commander, General Townshend, captured Kut in the end of September ; when it was said in the House of Commons that " a brilliant and uninterrupted series of victories gained by the British troops had broken the spirit of the Turkish forces." So Townshend was ordered to " carry on " and capture Baghdad with his gallant little force of 12,000 men. " Theirs not to reason why "—they set out in November ; and, on the 22nd of the month, marched into a trap laid for them at Ctesiphon by the skilful and wary Nur-ud-Din, Commander of the Baghdad Army Corps. Townshend fell back, and reached Kut on December 3. Here he entrenched and awaited reinforcements ; but he was quickly isolated, and besieged by Nur-ud-Din. In January 1916, a force was sent to relieve him, but failed. Again, on March 8, another relieving force was beaten at Es Sinn ; and a third attempt was beaten back at Sanniât on April 23. The surrender of Kut, with 8,000 British and Indian troops, followed, after a gallant and stubborn resistance of 143 days.

The men who failed to relieve Townshend were made Divisional Commanders in India ; and a new commander, Sir Stanley Maude, was appointed to the forces in Mesopotamia, which were now reorganised and strengthened. Then followed one of the finest pieces of organising work known in modern military history. With no railway, a very indifferent road, a tortuous river of strong currents and many shoals, and under a sweltering

sun, Maude set to work to keep the Turks constantly on the move, so as to prevent them from re-forming and hindering the advance on Baghdad. So well was the pursuit organised, the enemy was never allowed a moment's rest; and, what was still better, the Turkish troops north of Baghdad had no time to get down for the defence of the city. Fifteen days after the fall of Kut, which had taken place on February 24, 1917, Maude entered Baghdad. Even then he wasted no time. He sent out two columns; one to the north, the other north-east. The latter, in concert with some Russian troops from the north, drove off the Turks from the Persian border. The Turks had lost heart; they could not be got to face the British again; and in the operations from April to September, Samarra, 65 miles north of Baghdad, was reached by the conquerors, into whose hands fell 12,000 Turks and 120 guns.

The most striking operation in the campaign was the advance from Kut to Baghdad, a distance of 110 miles, in 15 days, which included a whole day's fighting outside the last defences of the ancient city of the Caliphs. The skilful planning and brilliant execution of this movement fully retrieved the earlier mistakes of the Mesopotamian Campaign; though no operations however brilliant could bring back to life the men who—as the report of the Mesopotamian Commission proves—were sacrificed to official ineptitude and blind folly.*

From the beginning of the campaign the total of men employed in Mesopotamia was 890,000; and the maximum strength during the campaign was 450,000. The casualties were: killed, 35,000; wounded, 53,000; missing, 15,000; a total of over 100,000, which was only exceeded in France and at the Dardanelles.

The part played by the Mesopotamian Arabs, and the general character of the tribes, may be summed up in the words of Macaulay:

“A crowd of camp-followers, a useless and heartless rabble, who prowl about the line of march in the hope of picking up something under the protection of the army, but who desert it in the day of battle, and often join to exterminate it after a defeat . . . who give no aid to its operations, who relax its discipline and dishonour its flag by their irregularities, and who, after a disaster, are perfectly ready to cut the throats and rifle the baggage of their companions.”

* Mr. E. C. Vivian: *British Dominions Year Book*.

They number about 2,500,000 altogether; it might be possible to raise from them a few squadrons of irregular cavalry or camel corps; but it is doubtful whether they could ever be impressed with even the most elementary ideas of honesty, discipline, loyalty, or self-respect.

The potential wealth of Mesopotamia, especially in wheat and oil, is believed to be enormous. Since the Armistice the British Government has spent £150,000,000 on its administration and development; and the best authority on the subject has stated officially that it will cost a further sum of £24,000,000 to keep Mesopotamia safe from floods, and £54,000,000 to irrigate 6,000,000 acres. But it is not yet settled as to who is going to repay this outlay by the profitable cultivation of the soil. No white man can live and work in the country: any labourers introduced from India would need constant protection from the fury and fanaticism of the present inhabitants; and it is very doubtful whether the Arab can ever be brought "to serve, to abide by the crib, to be bound with his band in the furrow and to harrow the valleys." And even if this difficulty had been surmounted, it is scarcely possible to imagine a wealthy and flourishing agricultural community peaceably existing side by side with such fierce and lawless neighbours as the Bakhtiari just east of them and the Kurds on the north, to say nothing of the Arabs themselves, and the Turks. To defend the plains, the adjacent highlands must be held; otherwise, the British Empire will have to deal with a new problem, far more complex and difficult than the existing problem of the defence of North-West India.

Aghanistan.

Afghanistan is the Switzerland of Asia; the Amu Darya (Oxus) corresponding to the Rhine, Russia (Transcaspia) to Germany, Persia to France, and India to Italy. Its breadth from north to south is about 500 miles; and its length, from the Herat frontier to the Khyber Pass, 600 miles. Its area is about 220,000 square miles, a little larger than that of France.

The population is not more than 4,000,000, and consists of discordant tribesmen, turbulent and treacherous, often in revolt, and only kept in subjection by frequent military expeditions from Kabul, the capital. The chief tribes are the Ghilzais in the province of Kabul, the Duranis between Herat and Kandahar,

the Amiaks and Hazaras in the Paropamisus mountains, north of the Duranis, and the Usbegs and Tajiks. The government is despotic, and very Asiatic : that of the strong arm. The ruler, called the Ameer, exercises varying, and sometimes very doubtful authority over the different tribes. Each of the four principal provinces, Kabul, Turkestan, Herat and Kandahar, is under a Hakim, or Governor, under whom nobles dispense justice after a feudal fashion. Spoliation, exaction and embezzlement are almost universal.

Afghanistan is divided into well-marked regions by mountain ranges, which form watersheds, with intervening valleys. Looking at the map, we first notice a series of mountain ranges which stretch almost entirely across the country from east to west. It begins in the north-east, with the Hindu-Kush mountains ; trending from east-north-east to west-south-west ; then, assuming a nearly east and west direction, takes the name of the Koh-i-Baba range ; and finally, about 66° E., divides into three ranges, all of which have a more or less westerly trend. The southernmost of these three ranges is called the Siah Koh, or Black Mountain. To the south of these ranges, most of the minor ranges have a more or less south-westerly trend, and most of the rivers have a similar direction.

To the north of the Hindu-Kush, the principal rivers are only tributaries of the Amu Daria, or Oxus, which, as far as Kwajah Saleh, forms the boundary between Afghan and Russian territory. On the south side of the Hindu-Kush rise the Ghorband and Panjir tributaries of the KABUL RIVER. This is an important river, rising in the highlands west of the city of Kabul, near where other important streams, the Helmand, Surgh-ab, and Heri-rud, also have their source. It has an easterly course, flowing through the mountain gorges down to the Indus. The Emperor Babar, when he invaded India in the sixteenth century, brought part of his army down this river in boats and on rafts. An important point on its banks is JELLALABAD, where General Sale resisted the Afghan attacks, after the Khoord-Kabul disaster of 1841. The HELMAND is also an important river. It is about 600 miles long, and rises about 12,000 feet above the sea. Its principal tributary is the Arghand-ab, which passes near Kandahar. The Helmand flows generally west, and ultimately loses itself in Lake Seistan, on the Persian borders. The HERIRUD is another river which loses itself in the western sands. It flows by HERAT, a city of the greatest

political, commercial, and strategic importance, in the north-west of Afghanistan. It stands at a height of 2,250 feet above the sea; is in the middle of a well-irrigated and fertile valley, 120 miles long and 12 miles broad. The capital of Afghanistan is KABUL, at the height of 5,800 feet above the sea-level; 190 miles by road from Peshawar; 230 miles from Kohat, by the Peiwar Kotal and Shutargardan route; and 460 miles from Quetta, by Kandahar and Ghazni. It is a great centre of trade, lying, as it does, on one of the oldest natural routes between Central Asia and India. It was taken by British troops in 1842 and 1879. GHAZNI is an important town, at the height of 7,000 feet, near the source of the Tarnak, one of the tributaries of the Arghand-ab. To the south-west, in the same valley, is the strong fortress of KHELAT-I-GHILZAI; and, more to the south-west, between the Tarnak and the Arghand-ab, is the celebrated fortified city of KANDAHAR, 150 miles north-west of Quetta, and 3,500 feet above the sea-level. This is a place of the greatest strategic importance; and in its neighbourhood General Roberts defeated the Afghans, under Ayooob Khan, in 1880.

In Afghan Turkestan, the principal places are Andkhui, Balkh, Khulm (or Tashkurgan), Maimana, Kunduz, and FAIZABAD. This last town, capital of the Khanate of Badakhshan, is situated on the river Kocha, 3,500 feet above the sea-level.

The CHIEF PASSES in the Afghan mountains are the UNAI PASS, 11,000 feet; the Irak or Bamian Pass, forming the separation; the Koh-i-Baba and the Hindu-Kush, on the route from Kabul to Balkh, 13,000 feet; the KHAWAK Pass, on the route from Jellalabad to Khulm and Kunduz, 13,000 feet; the DORA Pass, on the route from Kabul, *via* Chitral, to Faizabad, 14,000 feet; the DARKOT Pass, 14,000 feet; the BAROGHIL Pass, from Gilghit to the Pamirs, 12,000 feet. The KHYBER leads from Peshawar to Kabul; the KURAM from Bannu to the Peiwar Kotal; and the BOLAN Pass leads from Shikarpur to Quetta.

In 1896 the late Ameer Abdurrahman attempted to enforce a decree by which one in every eight men should be called upon to perform military service. But, strong as he was, his decree met with such general opposition that his law could only be put into execution in certain districts. At the beginning of

1897 the active troops amounted to 40,000 men, inclusive of 6,000 mounted troops. These figures rose, at the end of 1897, to 50,000 ; chiefly owing to the impression caused by the warlike operations on the eastern Afghan Frontier.* At the same time there were also formed 2 field, 6 mule, and 7 elephant batteries, all fit for service, while the larger garrisons of Herat, Mazar-i-Sharif, Kandahar and Jellalabad, as well as all the frontier guards, were strengthened.

The armament comprises the most miscellaneous patterns of rifles, Lee-Metford, Snider, Martini-Henri, Mauser, Berdan, Werndl and flint-locks ; the newest being with the frontier garrisons, the oldest with the troops of the interior. The modern patterns, amounting to 15,000, are not yet issued to the troops, but stored in Kabul. Ammunition, as well as rifles and guns, are turned out by an arsenal in Kabul, at the rate of 20,000 cartridges and 15 rifles a day, and 2 guns a week.

The maximum war strength of the army is reckoned at 50,000 infantry, 30,000 mounted men, and 200 guns.

The Afghan troops, however, cannot be depended upon to act for any length of time in large units, owing to faulty organisation.

Their importance consists rather in the fact that the country is so well suited to guerilla warfare. It is formed of barren mountains, full of hiding-places and passes, that bound vast steppes. They can thus throw themselves on the communications of an invading army, and compel this latter to a great expenditure of strength. It is probable that, for the organisation of resistance, or for more extensive operations against a Russian attack, British officers might be asked for to assist and lead them.

From the British point of view.

As the Afghans would very probably turn against that Power which first entered their country on the aggressive, there have

* The Ameer Abdurrahman sometimes showed that he possessed a fund of grim humour. Of him many stories are told, but perhaps this one is not generally known. The Russian Commander of a detachment at Ak Tapa, near Kushk, requested the Afghan Governor of Herat to allow him to hold a review of 8,000 men, and field-day, on the plain inside the Afghan border. The Governor passed on the request to the Ameer. After a short time the Russian received the reply : " The Ameer is pleased to grant your Excellency the permission to hold the review of your 8,000 troops. His Highness is particularly delighted at the time and place selected by your Excellency ; as he has also arranged to hold a review of 20,000 of his Afghan troops there at the same time."

been for a long time two opinions in England as to how the Indian frontier on the north-west should be defended. The first of these opinions, held by Lord Roberts, maintained that the North-West Frontier should not be crossed, and that the Russians should be allowed to make the tedious journey across the western steppes, or the eastern mountains of Afghanistan. They would thus encounter the fresh Indian troops at Pishin and Peshawar, while they themselves would be greatly weakened by the necessary guarding of their communications. In this strategy, the problem for the British would be a very simple one, viz. to be able to move adequate forces with rapidity to any given point along the frontier. If, on the other hand, an advance were made to meet the Russians beyond Kandahar and Kabul, the British would be exposing themselves to those very difficulties of communications, and would, moreover, have in their rear defiles which, should they fall into the hands of Afghans or other insurgent hill tribes, would lead, in case of a compulsory retreat, to the annihilation of the army, as it did in 1842.

The opinion opposed to that of Lord Roberts is that it would be better to hold the line Kandahar-Ghazni-Kabul, on the defensive ; at the same time pushing forward a force to Charikar, at the Hindu Kush, so as to carry out the offensive along one or the other direction, against an enemy weakened by the difficulties of the advance. But for this purpose it would be necessary to make certain of Afghanistan, to introduce a higher civilisation into the country, and to lay out a close network of railways and roads. The future continuation of the railway from Chaman to Kandahar seems to point to the adoption of this second plan. But, indeed, if Russia progresses step by step in the future as she has done in the past, it would not be at all advisable for the British to await their enemy in a passive position ; for, in her gradual advance, Russia will, as she has done before in Central Asia, overcome every difficulty in the way of her communications through Afghanistan just as she has now done with regard to her position at Kushk. The adoption of this plan also seems confirmed by the efforts of the British to create secure lines of communication into Seistan, and to establish themselves there, as well as on the coast of the Persian Gulf.

In August, 1921, a Treaty was arranged between Persia and Afghanistan, of which the most important clause is that if either of them becomes involved in war with a third Power, the other

side immediately comes to his assistance.* There is not much mystery as to who this "third Power" may be; and to find it does not demand any deep application of the theory of elimination. If British statesmen cannot believe that Afghanistan will violate her Treaty (1921) with England, on the first favourable opportunity, the only thing to be said about them is that their credulity has already survived far more severe strains.

To draw a rough sketch, showing the distances in the Middle East, is of no difficulty. Using any convenient scale, start with a perpendicular, 350 miles long, from Karachi to Quetta. From Karachi draw a line on the east, making an angle of 23° with this, and exactly twice its length; this fixes Peshawar. From Peshawar draw a line to scale, to represent 1,000 miles, parallel to the Karachi-Quetta line; this gives us the position of Bombay, and passes close by Multan. From Peshawar draw a line to represent 600 miles, making an angle of W. 80° N. with the Peshawar-Karachi line, and we get Zulfikar, at the junction of Afghan, Persian and Russian territory. From here draw a parallel to the Karachi-Quetta line; and 100 miles north of Zulfikar we have Sarakhs; 700 miles south of Zulfikar is Gwador on the Arabian Sea. This is the shortest way for a Russian railway to a port in the Middle East. From Sarakhs draw a line westwards to represent 500 miles, perpendicular to the Sarakhs-Zulfikar-Gwador line, and we get Teheran. Draw a line from Sarakhs, to represent 900 miles, making an angle of 20° with the Sarakhs-Teheran line; this gives us Mount Ararat, at the junction of Persian, Turkish and Russian territory, 220 miles from the shores of the Black Sea, and 250 miles from the Caspian. Port Said is at the apex of an isosceles triangle, each side 900 miles long and making an angle of 30° with each other, having Fao at the southern end of the base and Mount Ararat at its northern end. Fao is a fort at the mouth of the Shatt-ul-Arab and on its right bank. A line to represent 1,200 miles, drawn direct southwards from Fao, gives Aden. Join Fao and Gwador: we get a line 800 miles long, passing through Bushire and Bunder Abbas. Bushire is the most important port on the Persian Gulf, 200 miles from Fao and 300 from Bunder Abbas. From Fao to Sarakhs is 800 miles; a line half this length, and parallel to the Fao-

* Not before full details of this Treaty had appeared in the French newspapers was any information given about it in the English Press or in the official news from India.

Sarakhs line, from Teheran, gives us Baghdad, on the Tigris, the most important city in Turkish Arabia, and 300 miles from Fao. Bombay may be taken as the apex of an isosceles triangle, each side 1,000 miles long, and base 1,200 miles, having Calcutta and Peshawar at its ends. If the Calcutta-Peshawar line be produced for 300 miles it gives us Mazar-i-Sharif; and if the Karachi-Peshawar line be produced for 200 miles, we get the Baroghil Pass. Madras is 800 miles from Calcutta, the same distance that Bombay is from Cape Comorin. Karachi is equally distant from Bombay and Muscat.

In 1907 England and Russia made a praiseworthy attempt to live more neighbourly in Asia. By the terms of this agreement between them, Great Britain undertook not to seek in Persia political or commercial concessions north of a line connecting Kasr-i-Shirin, on the east with Ispahan, Yezd, and Khakhi, to the junction of the Persian, Russian and Afghan frontiers, and not to oppose Russia there; while Russia gave a similar undertaking regarding the territory south of a line extending from the Afghan frontier to Ghazik, Birjand, Kerman and Bunder Abbas. Russia agreed to recognise Afghanistan as outside the Russian sphere of influence; and both countries undertook to respect the territorial integrity of Tibet. The Treaty did not affect Central Persia or the shores of the Persian Gulf, which remained a sort of neutral ground.

In Trans-Caspia and Central Asia, the following places should be noted, and the distances given here remembered:—

- | | |
|---|--------------|
| (1) Petrograd to Orenburg | 1,230 miles. |
| (2) Orenburg to Tashkent | 1,200 „ |
| (3) Tashkent to Khushk <i>via</i> Merv .. | 450 „ |

Trans-Caspian Railway :

- | | |
|---|-------|
| (1) Krasnovodsk to Kizil Arvat | 170 „ |
| (2) Kizil Arvat to Askabad | 136 „ |
| (3) Askabad to Merv | 214 „ |
| (4) Merv to crossing of the Oxus, Charjui | 147 „ |
| (5) From the Oxus to Bokhara | 66 „ |
| (6) Bokhara to Samarkand | 175 „ |

Up to the present the most important position, from a

strategic point of view, on the whole railway, is Merv. It is 520 miles from the Caspian, 147 from the Oxus, half-way between Khiva and Herat, also half-way between Meshed and Bokhara. From Merv down to Khushk, on the Afghan frontier, is 170 miles. There is a railway projected from Samarkand down to Termez, shortest way to Balkh, and, *via* the Bamian Pass, to Kabul. From Zulfikar, on the Heri-rud, to Khoja Saleh, the Oxus is the conventional boundary between Afghanistan and Russia, 270 miles. From Khushk to Herat is 70 miles, and from Herat to Chaman, the nearest British outpost, is 330 miles. Kandahar is at the apex of an isosceles triangle, having each side 300 miles long, Herat and Kabul being at each end of the base; the base itself being 400 miles, running nearly direct east and west. Chitral is also the apex of an isosceles triangle having its sides 140 miles long, Peshawar and Gilgit being at each end of the base.

In the beginning of 1914, the Russian military centres here, and the number of troops in each, were: TASHKENT, head quarters of the First Turkestan Army Corps, 30,000 men and 60 guns; ASKABAD, headquarters of the Second Turkestan Army Corps, 25,000 men and 52 guns; Semirechia, 4,000 men and 12 guns. The Railway Engineers were about 4,000; the Frontier Guards, on the Persian and Afghan frontiers, 3,000, and additional artillery in various places, 4,000. There was a Special Railway and Transport Corps at Khushk, 500 men. It was confidently laid down that the troop-trains on the Trans-Caspian and Orenburg Railway would run at the rate of 15 miles an hour, and that 15 trains could be sent off from Orenburg every day. One of these trains was supposed to carry 1 battalion of infantry, or 1 battery of artillery, $1\frac{1}{2}$ squadrons of cavalry, or 300 tons of supplies.

The Baghdad Railway.

[*In the next few pages the first paragraphs, under the heading (a) are what was written on the subject in the first edition of this book; the paragraphs under the heading (b) give an account of the Baghdad Railway up-to-date.*]

(a) The Anatolian Railway begins on the east side of the Bosphorus, at Skutari (the Aldershot of Turkey), and after going 70 miles south-east, bends sharply to the south-west, bends again to the south for another 70 miles, when it turns eastwards to the junction of Eski-Shehir. From here a branch

runs to Angora ; and it is probable that this branch may be continued later on to Yuzgat, Sivas, Erzingan (the headquarters of an Army Corps), and Erzeroum. The old trade route from Baghdad went along this route, from Sivas. From Eski Shehir the railway goes by Kutaya to the junction of Afioom Kara Hissar. Here it is joined by the branch from Smyrna. Then the railway runs south-east, to Konieh and Eregli ; after which it meets that range of hills called the Bulghar Dagħ. Having got over this obstacle, it will pass on to Adana, which is connected by a small railway, 41 miles long, with the seaport of Mersina. This place, Mersina, is a bad harbour and landing place ; but the same thing may be said of all the places on the Gulf with the exception of Alexandretta itself ; and this place the Sultan will not hand over to the railway syndicate. The other two places in which it is possible to make a railway harbour, are Ayas and Youmourtalik. (From Alexandretta, or Skanderoon, as the Turks call it, to Aleppo, there is a fairly good road, over which wheeled conveyances take 50 hours to do the journey.) After leaving Eregli, the railway will go through the celebrated gorge of the Chakit-Su, the highest point in the alignment, about 4,300 feet. From Tel Habesh, a branch goes down to Aleppo and Damascus ; then the main line goes across the desert, by Ras-al-Ain, to Mosul. From here it will run down by the right bank of the Tigris to Baghdad, then south-west to cross the Euphrates near Kerbela, then down by the right bank of the Euphrates to Zobehr, west of Basra, and will probably terminate at Umm Khasa. A terminus at Koweit (or Grane), unless it were under English control, would lead to international troubles. Koweit is the best harbour in the Persian Gulf. The Bay of Koweit contains a deep anchorage of about 20 miles east and west, with an average breadth of 5. It is the natural port of the large and important Arab States of Nejd and Jebel Shammer ; the population of Koweit is about 15,000.

North of Koweit is Babyan Island ; and, on the mainland, Umm Khasa, Safwan, Zobehr, in this order from south to north. Between Babyan Island and the mainland is Khore Abdulla, a strait with an average depth of four fathoms. Fao is on the southern (right) bank of the Shatt-ul-Arab ; a cable from Karachi lands here.

The other places of importance round the Gulf coast are Mohammerah, Bushire, Lingah, Bassiduh on Kishm Island (British territory), and Bunder Abbas. Two cables go from Karachi to Bushire ; one along the coast to Jask, then by sea ; the other all the way by sea, touches at Gwadur.

(b) It may be assumed that what is now generally called the

Baghdad Railway will be completed very soon. As it is no longer called the "Anatolian Railway," we shall take it as starting from Haidar Pasha, on the Bosphorus shore opposite to Constantinople, and running by the way of Eski-Shehir, Afioom Kara Hissar, Konia, Eregli and Adana. Beyond this it encounters its most serious obstacle in the Taurus mountain system; this passed, it pushes on by Aleppo, crosses the Euphrates at Jerablus, and then, as originally planned, runs by Ras-el-Ain to Mosul and Baghdad on the Tigris. Here its designed course passes from that river back to the Euphrates, which it was meant to follow approximately to a port on the Persian Gulf. It has a branch to the north-east shore of the Mediterranean in the Gulf of Alexandretta; at the junction near Aleppo it connects with the line southward through Syria to Medina (Hedjaz Railway), with its branches to important points in Palestine. In addition, there are plans for a northern alternative line in Asia Minor, through Angora, Sivas, Kharput and Diarbekr, and a branch right into Persia by way of Khanikin. The Baghdad Railway is thus the trunk line of a system of the greatest potential importance, economically, strategically and politically; the middle section of a great international line to India, and from Paris to Peking. The distance from Constantinople to Baghdad is about 1,500 miles, and to the Persian Gulf, 1,850. It was calculated by Von Sanders that, when the railway was complete, a troop-train which left Constantinople at six o'clock on Monday morning would reach Baghdad by noon on Wednesday.

The conception of a railway from the Eastern Mediterranean—whether from Alexandretta, Tripoli, Beyrout, or some point on the Egyptian coast—to the Persian Gulf, designed to expedite traffic between Europe and the Far East, is of very early origin, dating from the period when through sea-communication still lay round the Cape of Good Hope, when the isthmus of Suez was crossed by land, and when German interests had not yet come above the horizon in the Near East. But during the period since 1888, when, under German influence, the railway from Western Europe to Constantinople was completed, the furtherance of German railway schemes in Asia Minor and beyond affords one of the most successful examples of what is called "peaceful penetration"; which, in the case of Germany, has been always synonymous with "peace strategy." British interests already in the field in Asia Minor, as well as French interests in Syria,

were gradually, but very effectively, squeezed out. These, however, were of local importance only ; so far as concerned the Far Eastern connection, Great Britain had preferred the acquisition of control over the Suez Canal to any shortening of the route by a railway, which, as a mail route to India, offered less advantage in time than might have been expected, and certainly far less security.

Germany sought international help to complete her scheme of the Baghdad line, once she had got the necessary concessions from Turkey into her hands. But her appeals were too patently Pecksniffian to take in even the most innocent and well-disposed. England held back, despite a strong body of opinion in favour of joint action. It is difficult to assess the effects of this attitude upon the course of the war ; but it is now quite clear that Germany precipitated war too soon for her own best interests in the Baghdad scheme. An outlet on the Persian Gulf was not of prime military importance, in the face of opposing command of the sea, which could close the narrow gateway of the Gulf ; but the railway itself was designed, as it has proved, to be difficult of attack from the sea at any intermediate point ; and complete connections with Armenia, Persia and Palestine must have materially affected the situation directly Turkey had joined the Central Powers.

The principal economic objectives of the Baghdad Railway were the exploitation of Asia Minor and the development of Mesopotamia. It was expected that if the irrigation works and agriculture of the River-Land could be brought back to the standard of antiquity, and if the oil and other natural wealth of its borders were found to yield as they promise, it would mean a rich harvest for investors.

The political and strategical objects of the line are, in the first place : the internal commitments of the Turkish Government, if, indeed, such a government could have made any really successful use of the railways in the direction of the good ordering of its outlying territories ; and, secondly, the external view of an Eastern policy made in Germany, the *Drang nach Osten* ; * and the following out, through Persia, towards India, of the routes for which Sven Hedin, just before the war, kindly supplied a most excellent and useful topographical survey.

As to the future of this railway, a process of internationalising is vaguely advocated ; but the practical working of an

* The Push to the East.

internationalised railway is a problem which no man, or no body of men, will ever be able to solve. No Power effectively administering a given territory can be conceived as admitting other Powers to equal shares in the control of a railway passing through that territory.* There is one Power and one Power alone, who is capable of administering the railway from Constantinople, *via* Baghdad, to Karachi and Calcutta, with efficiency, honesty and success; and that is the Power which, in the near future, will administer the great railway artery through Africa, and its branches, covering a length of 6,000 miles.

Airways and Distances

The world has become very small in the last ten years. Forty years ago, when Jules Verne wrote his *Round the World in Eighty Days*, this work was received as a wild and extravagant flight of imagination, only a little less fabulous than the Oriental legend, quoted by Milton, of

“ . . . the wondrous horse of brass
On which the Tartar King did ride.”

The “wondrous horse” has now become such a prosaic hard fact and common sight that little children no longer stop to look up at it. It is not made of brass, but of wood and steel and aluminium; and it leaves the trail of its petrol in the track of the eagle. As a servant of man it is as yet only in its infancy; still, if it starts from London on any Monday morning, it will get to Cairo on Tuesday, Calcutta on Thursday, and Sydney on Saturday. If it goes west instead of east, it will be in New York on Wednesday, and Vancouver very early on Thursday. By the air service, a man can have his lunch in London, and his dinner in Paris on the evening of the same day. The number of days formerly calculated for a voyage will now give the number of hours for the same journey.

New air-routes are opening up very quickly on the European continent. The latest is that between Copenhagen and Amsterdam, *via* Hamburg and Bremen; which, with the service already running between England and Holland, provides a direct through route between Copenhagen and London. Letters posted in Copenhagen in the morning reach London on the afternoon of the following day; and, by the use of the air-

* Mr. O. R. Howarth, M.A., *British Dominions Year Book*.

junction at Bremen, London and Berlin are now brought within one day's journey of each other. Through routes from London to Rome and Madrid are already in operation ; and the French authorities have a regular service right through from Paris to Constantinople. It is expected that a regular trans-Atlantic air service between Europe and America will be soon in operation. The airships will carry 500 persons, the journey will take 48 hours, and the fare will be about £50. With the European air service extending to Constantinople and the American air service from New York to San Francisco, the combined service will give us an air route of 8,000 miles. Another trunk airway of great importance connects Europe with South America. Starting from London, it goes *via* Paris and Toulouse to Rabat, in Morocco ; thence down the West African coast to Bathurst, the capital of Gambia. Here the passengers will be transferred to a fast-flying airship, and will make a trans-ocean flight through the belt of equatorial calms to Pernambuco. It is expected that the journey from London to this place will be accomplished in 48 hours. From Pernambuco to Buenos Ayres (2,600 miles) is expected to take 40 hours.

The United States Government are about to find an air route from Alaska across the Arctic zone to the north of Asia ; so that, by means of the aeroplane, not only the Arctic regions, but also other undiscovered and unknown places on the earth's surface will come to light ; and the geographical position of London, as the centre of the land hemisphere, qualifies it to be the centre of the world's airway.

In Captain Ross Smith's flight from London to Sydney (Australia) his route was as follows :—

(The figures given represent the number of English miles each place is from the previous place, as the crow flies.)

From London :

To Paris, 230 ; Lyons, 250 ; Pisa, 330 ; Rome, 170 ; Naples, 110 ; Taranto, 150 ; Suda Bay (Crete), 460 ; Sollum (Egypt), 300 ; Cairo, 400 ; Damascus, 350 ; Ramadie, 430 ; Basra, 330 ; Bunder Abbas, 560 ; Karachi, 700 ; Nasirabad, 480 ; Delhi, 220 ; Allahabad, 360 ; Calcutta, 450 ; Rangoon, 650 ; Bangkok, 380 ; Sengora, or Song-Kla, 450 ; Singapore, 480 ; Surabaya, 850 ; Bima

(Sumbawa), 420 ; Port Darwin (Australia, Northern Territory), 800. From here Captain Ross Smith passed along the line of the railway termini of Katherine, Cloncurry, Charleville and Bourke, to Sydney ; the whole journey being about 15,000 miles.

It may be laid down as a general rule to go by, that the aeroplane travels at an average speed of 100 miles an hour. If, therefore, the distance between any two places is known, the number of hours required for the journey is found by cutting off the last two figures of this distance, in miles.

The air route connecting Egypt, Palestine and Mesopotamia is now in full working order. The planes start from Heliopolis to Ramleh, 260 miles ; Ramleh to Amman, 65 ; Amman to Kaar-Ayrah, 55 ; Kasr-Ayrah to Ramadie, 400 ; Ramadie to Baghdad, 60 ; the total distance being 840 miles, and the average time twelve hours.

From Liverpool, our second greatest seaport, and including Birkenhead, distances are as follows : To Akra, on the Gold Coast, 3,800 miles. In connection with this, it may be easily remembered that Lagos, the principal port of Nigeria, not far from Accra, may be put down in round numbers as 4,000 miles. To Alexandria is 3,000 miles, and takes 14 days by sea. But from London to Alexandria, *via* Brindisi, is 2,300 miles, and takes only 6 days. To Barbados, in the West Indies, is 3,700 miles, so that Accra and Barbados are about the same distance from Liverpool ; and the distance to the Guinea Coast and the West Indies may be roughly put down as 4,000 miles. Now let us see where 4,000 fits in for other distances.

From Aden to Batavia, in Java, is 4,000 ; from Mauritius to Albany, in Australia, is 4,000 ; so is Honolulu to Auckland ; Vancouver to Shanghai ; Southampton to Colon ; and Liverpool to Chicago. Under the 3,000 distance come Liverpool to New York ; Marseilles to Aden ; Liverpool to Beyrout ; Glasgow to Boston ; Liverpool to Constantinople ; Liverpool to Montreal ; Southampton to New York ; and London to Cyprus.

The principal distances in the Mediterranean are : from Marseilles to Philipville, 400 ; Gibraltar to Malta, 980 ; Malta to Port Said or Larnaka, 930 ; Malta to Brindisi, 360 ; Brindisi to Port Said, 930 ; Genoa to Gibraltar, 850 ; Marseilles to Naples, 470 ; Malta to Constantinople, 900 ; and Marseilles to Port Said, 1,508.

Constantinople is, by sea, 350 miles from Odessa, 480 from Kertch, and 580 from Batoum.

Other important distances by sea are :—Copenhagen to Petrograd, 700 miles ; Copenhagen to Leith, 700 ; Hull to Hamburg, 400 ; and Liverpool to Lisbon, 1,000.

From London to Moscow, *via* Berlin and Warsaw, is 1,791 miles, in round numbers, 1,800 ; and, by rail, takes 71 hours. From London to Petrograd, *via* Flushing, Berlin, and Eydtkunen, is 1,750 miles, and takes 57 hours. It takes just the same time to get from London by rail to Constantinople as to Moscow. From Paris to Constantinople is 1,857 miles by rail.

Naval Bases and Dockyards

It would be well for the student of Military Geography to make up the Naval Dockyards and Naval Bases, not only of Great Britain, but of other countries.

The naval dockyards in Great Britain are : Rosyth, on the Firth of Forth ; Pembroke, in Milford Haven, 285 miles from London by rail ; Devonport, 250 miles from London ; Sheerness, and Chatham. I have already mentioned that the Firth of Forth, Edinburgh and Glasgow are each 400 miles from London, and Liverpool is 200.

One of the most important naval dockyards in our colonies is Sydney. It is also a very strongly defended naval base, and coaling station. And the other defended coaling stations in Australia are : Melbourne, Port Adelaide, Albany, Newcastle, Perth, and Thursday Island. In New Zealand, the defended coaling stations are : Dunedin, Lyttelton, Wellington and Auckland. All these should be carefully remembered.

The most important seaport in India, Bombay, is not very strongly defended. The defences of Karachi are much more formidable than those of Bombay ; and with a railway from Europe, *via* the Middle East, to Karachi, and the hoped-for development of the Middle East under the ægis of Great Britain, there is no reason why Karachi, in the future, should not become equal to Bombay, in importance, if not in size.

The other naval dockyards abroad are : Bermuda, Ascension, Malta, Gibraltar, Cape Town, Jamaica, Singapore and Hong Kong.

The Naval Bases on the coast of Ireland are : Cork Harbour, Berehaven, Blacksod Bay and Lough Foyle. Off the coast of Scotland are Lamlash, Rosyth and Scapa Flow.

France has two naval bases in the Mediterranean : Toulon and Biserta ; her naval base on the Atlantic is Brest ; in West Africa, Goree and Dakkar ; in East Africa, Jibuti, and Nossi Bé, on the north-west coast of Madagascar. On the coast of Annam, in the Far East, her principal port is Hué, with Turan as coaling station.

In Japan the principal naval bases are in the Inland Sea, between the islands of Hondo, Shikoko and Kiushiu ; with Makung, on the western coast of Formosa.

The American naval bases are at Key West, south of Florida ; Fonseca Bay, west of Nicaragua ; and Honolulu, in the Sandwich Islands. During the war, a temporary American base was established at the Azores, to protect shipping.

The Pacific Ocean

When dealing with any large section of the earth's surface, especially where it is a matter of calculating distances, nothing is more misleading to the student than the apparent simplicity of a Mercator's Chart of the World. The student should keep constantly before his mind that what he is looking at is *not* a flat surface, but a solid body, bulging towards him.

The Military Geography of the Pacific Ocean should be studied from a globe ; otherwise, the points put forward here will not be clearly understood.

The completion of the Panama Canal has quite modified the factors of the commercial, political and military geography of the Pacific Ocean. Looking at this great body of water, as represented on a Mercator's Chart, and *not* taking into consideration that it represents part of the surface of a sphere, the student would be very likely to fall into the mistake of supposing that the shortest route from Panama to Yokohama, across this ocean, would be represented by a line, almost straight, passing through Honolulu, in the Sandwich Islands. But this idea, in addition to its being mathematically incorrect, would result in ascribing altogether too much importance to the geographical and strategical position of Honolulu. The fact is that there is only *one* trade-route in the Pacific Ocean on which Honolulu lies ; and that is the route from San Francisco to Australia.

The shortest distance between any two points on a sphere, or globe, is by what is called a " great circle " ; that is, a line

traced on the surface of the sphere by a plane passing through the two points and the centre of the sphere itself.

Now bearing this in mind, we shall see that the great circle connecting Panama with Yokohama passes through the Caribbean Sea, the Gulf of Mexico, Galveston and Denver ; striking the Pacific coast of the United States just north of Seattle, and skirting the Aleutian Islands. So that, in order to get from Panama to Yokohama by the shortest possible route, the navigator should steer his ship so that her course will be, as nearly as possible, parallel to this curve. Starting out from the Canal he should run north-west along the coast of Central America and Mexico. After clearing Cape S. Lucas he should take the great circle from here to Japan. His correct course will run about 1,700 miles to the east of Honolulu, and about 300 miles west of San Francisco.

Therefore we see that San Francisco has now become the key and gateway of the Pacific, in so far as North America is concerned. All vessels going direct from the Atlantic to the Far East, by the Panama Canal route, will make San Francisco a harbour of call. And **there is no port on the American Continent which has been so influenced by the construction of the Panama Canal as San Francisco.**

The shores of the Pacific are richer in useful and valuable minerals than any other regions of the world, and it is only quite recently that the inherent wealth of the Pacific Islands has been appreciated in Europe and America. Following the successful construction of the Panama Canal, and the redistribution of certain European possessions in Oceania, the Military and Political Geography of the Pacific Ocean have now attained greater importance and interest than before. This is a world interest, being particularly shared between the two most powerful races in the world ; on one side, the Mongolian, represented by the Japanese ; on the other, the Anglo-Saxon, represented by the United States of America. That a conflict between these two races is in the distant future inevitable there can be no possible doubt ; but that it should take place in our time could be only the result of criminal insanity on the part of the people who provoke it, and mental aberration on the part of their rulers.

The possessions of the United States lying between America and Asia, across the Pacific, are the Sandwich Islands, Wake Island, Guam and the Philippines. When the United States

took the Philippines from Spain, they made their "Monroe Doctrine" a dead letter, a scrap of paper. From San Francisco to Honolulu (Sandwich Islands) is 2,000 miles; from Honolulu to Yokohama is 3,500 miles; to Formosa (the most southern possession of Japan), 4,000 miles; and to Manilla, in the Philippines, 5,000 miles. Of the American possessions, Wake Island is good for nothing. Guam, 1,600 miles east of the Philippines, has an area of 200 square miles, and would be used by the United States as a naval base in case of a war with Japan. The Sandwich Islands contain a population of 160,000 Japanese, to 30,000 Hawaiians and 7,000 Americans. If America were to convert the Philippines into a strong naval base, there is no doubt that Japan would look upon this as equivalent to a declaration of war. Then Japan's first move would be to seize the Philippines, which are only 300 miles south of Formosa. The Carolines and the Ladrone Islands, on the east of the Philippines, have been mandated to her, under the League of Nations. And there is no doubt that she would turn them to good use in her naval operations against an American fleet 6,000 miles away from its base. If the Americans, by way of a counter-stroke, were to seize Formosa, they would be then strategically worse off than before, with the Japanese on the right and left of their communications. On the other hand, if Japanese ambition aimed at the possession of the Sandwich Islands, such a move would be entirely to the advantage of America; as the Japanese fleet would then be operating 4,000 miles away from its base. As to the idea of Japan sending a military expedition across 5,000 miles of the Pacific, to effect a landing on American soil, it is certain that America would like nothing better. In such a case the American commander might truly and joyfully repeat the words of Cromwell, when he saw the Scotch army, at Dunbar, coming down from their strong position to fight him in the plains: "The Lord hath delivered them into my hand." The Japanese would have no Yalu or Nanshan to follow such a risky operation, as they had in 1904. And it is altogether improbable that America would for a moment think of despatching a large military force to try to effect a landing in Japan.

Therefore the struggle between the two powers would be limited to naval operations only, with varying and indecisive results, barren in material advantage or national glory, and of

no profit to anybody but the shipbuilders, gun foundries, ammunition-makers and army contractors.

The Far Eastern Question

It is only during the last thirty years that what is called the "Far Eastern Question" has come into practical European politics. Its origin dates from the Chino-Japanese War of 1894, and the intervention of Russia, Germany and France, which compelled Japan to forgo largely the fruits of her victory over China, and to abandon her demand for the cession of Southern Manchuria. The three European Powers then claimed, and obtained, substantial compensation from China, for services rendered. Within three years, Germany had got Kiao Chau; Russia had Port Arthur and Dalny; France, Kwang Chow Wan; while England also had managed to secure a lease of Wei-hai-Wei, and the "Kowloon Extension," on the mainland adjacent to Hong Kong. In addition to this, the Western Powers now set themselves to carve up China into "Spheres of Influence," without in the least consulting or caring about Chinese permission, agreement, or opinion. They emeshed China in a network of projected railways and other concessions; a proceeding which could not fail in retarding the economic development of the country.

The only Power that held aloof from this plundering scramble—in which even little Belgium took a hand—was the United States. China bitterly complained that she had been used, in her own house, by the European Powers, as a pawn in a game in which she had neither stake nor interest.

If, by any straining of the principles of International Law, any Powers had a just right to interfere in the internal affairs of China, the only Powers which had the slightest foundation for such a right were England and the United States. It was England and no other that first opened up China to the world's commerce. The United States' Government has contributed more than all others to the educational advancement of Modern China. And since her acquisition of the Philippines (1898), and the construction of the Panama Canal, America has been drawn more and more deeply into the orbit of the Far Eastern Question.

England did not make the best use of her early opportunities in China. The story of our "Opium War" is something of

which we have no reason to be proud. Our former Alliance with Japan made us practical aiders and abettors in Japan's Imperialistic designs against China. On the other hand, America holds an excellent record in her dealings with China. Of all the Powers engaged she alone renounced her share of the "Boxer" indemnity. The legitimate interests of America in the development of China are just as important to humanity as those of England or Japan; and, still more, they contain no elements of privilege such as those which vitiate Japanese policy.

Why America differentiates in her manner of dealing with the Japanese and Chinese in the United States is a matter easily explained. The Chinaman in San Francisco, New York, or Chicago represents no nationalistic or ulterior aim. But the Japanese comes to America, or Europe, with the outlook of a highly-developed and intense nationalism, which induces the American to look upon him as a disturbing factor in the full development of White Civilisation. In the United States the White Man is easily and naturally assimilated; after a few years' residence in New York, the Neapolitan, the Finn, the Greek, and the Polish Jew are more enthusiastic than the descendants of the Pilgrim Fathers in their celebration of the Fourth of July. But the Japanese Yellow Man always represents a race apart, of fixed and immutable character, with a mentality and a civilisation altogether alien to those of the White Man. America has already her Black Problem, and she cannot be blamed if she is unwilling to saddle herself with a Yellow Problem.

The conduct of Japan during and immediately after the Great War has not been such as to impress other Powers with any exalted sense of her political virtue and disinterestedness. In January, 1915, she seized the opportunity to send to China a most extraordinary Note containing categorical demands which are now commonly known as "The Five Groups." This meant nothing more nor less than the assumption of China as a Japanese Protectorate. Japan wished to take over the Police, Finance, and Military Organisations of the whole of China. The Japanese Foreign Minister, Baron Kato, sent to London a garbled and incomplete copy of the Note, from which all the most important clauses had been omitted. When the attention of the Japanese Prime Minister, Baron Hayashi, was called to this, he was good enough to say that the action of his Foreign Minister almost constituted a breach of the Anglo-Japanese Alliance.*

* *L'Impérialisme Japonais*. H. Labrone. Paris. 1921.

In 1916, at a time when the prospects of the *Entente* seemed by no means bright, the general tone of the Japanese Press was a vacillation not unfavourable to the idea of ultimate victory for the Central Empires, and it suddenly began to evince an affection for nationalistic aspirations in British India. And at the same time she was throwing out suggestions to some statesmen of the *Entente* that she should be rewarded for her "loyalty" by being permitted to take the Dutch East Indies.

But the worst in Japan's shady record is the part she played in the Siberian Expedition of 1918. It was arranged that England, Japan and America should each send a force of 7,000 men to assist Koltchak in Siberia. In addition to her proper share as agreed upon, Japan quietly sent another force, of 93,000 men, up through Korea and Manchuria. When this became known and further inquiries were made, Japan put forward the plausible excuse that China had refused to co-operate with her against a Russian invasion. When the extra large force of the Japanese entered Siberian territory, the movement of such masses of troops along one line of railway naturally dislocated the working of the line, disorganised and delayed the movements of the other forces, and they never made any serious attempt to co-operate with the British and Americans. They blew up the great railway bridge over the Amur, alleging that the Bolsheviks were preparing to send armoured trains into Manchuria by this line; and that part of their force which had landed at Vladivostock perpetrated the most brutal massacres on inoffensive, unarmed and starving Russian subjects, in the Maritime Province, between the Ussuri river and the Pacific coast.

Bearing these hard facts in mind, we are not surprised to know that when the Paris Peace Conference had transferred to Japan all former German rights and interests in Shantung, China flatly refused to sign the Treaty of Versailles; that Japan attempted to enforce her claim, and that the Washington Conference spiked her guns.

PART II

A SHORT SKETCH OF THE POLITICAL GEOGRAPHY OF MODERN EUROPE, IN ITS RELATION TO MILITARY GEOGRAPHY

*With special reference to the Treaties, Alliances, and Ententes
which preceded the Great War of 1914-1918.*

IN connection with the causes of England's participation in the Great War of 1914-18, the first important treaty to be noted is the

Treaty of London, 1831,

signed by Great Britain, Austria, Belgium, France, Prussia and Russia. It provided that Belgium should be an independent and permanently neutral State; and Belgium's neutrality was placed under the Guarantee of the Powers which signed the Treaty.

The clauses of this Treaty were embodied in the second

Treaty of London, 1839,

which finally erected Belgium into a State separate from Holland. The effect of these arrangements was to make it on the one hand unlawful for Belgium to enter into a war except in self-defence; and, on the other hand, to bind the signatories to respect, and cause to be respected, her neutrality.

In August, 1914, Germany, who as the successor of Prussia, was bound by the Treaty, violated it, by entering Belgium, in order to attack France.

The German Imperial Chancellor, speaking in the Reichstag, admitted the breach of neutrality; but he pleaded that necessity knew no law.

This action it was which made it necessary for Great Britain,

as a guarantor of Belgian neutrality, to assert both her rights and her duties, under the Treaty, by force of arms ; so war was declared by her, upon Germany, on the night of August 4, 1914.

The Declaration of Paris, 1856,

signed by Great Britain, Austria, France, Prussia, Russia, Sardinia and Turkey, and subsequently agreed to by almost every State of any importance, *except the United States of America*, lays down the most reasonable rules for the conduct of maritime warfare, namely :

- (1) That privateering is abolished.
- (2) That goods of the enemy sailing under a neutral flag cannot be captured, except contraband of war.
- (3) That neutral goods sailing under the enemy flag cannot be captured, except contraband of war.
- (4) That a blockade, in order to be binding, must be effective.

The Geneva Conventions of 1864 and 1906,

to which practically all civilised States are parties, lay down rules for the treatment of the wounded.

The Hague Conventions of 1899 and 1907

are a series of agreements covering, among other matters, the whole subject of Land Warfare, and some important topics of Naval War. The necessary regulations, founded on these Conventions, for the guidance of British Armies in the Field, are contained in the War Office Manual of Military Law.

The Declaration of London, 1909,

was signed by all the Great Powers of Europe, and contains agreements on such important topics of maritime warfare as blockade, contraband, and the destruction of neutral ships. During the Great War it formed the basis of the naval action of all the belligerents.

We shall now take into consideration all those other Treaties, Alliances, Ententes, and arrangements which were formed between the various European States for thirty years before the Great War.

1

As we shall have to speak of, and deal with, various *Alliances*, and *Ententes*, let us, first of all, clearly understand the signification of these words.

Alliances imply political and military engagements of a general character. In the eighteenth and nineteenth centuries, an alliance between two States, A and B, was understood to be "an offensive and defensive alliance." If A is attacked, B is to come to his assistance; if B is going out to fight another State, C, he can depend on having the support of A's army.

Ententes have for their object either to establish special co-operation on some given point, or to associate two policies; without, however, binding each other by the *military clauses* that constitute *Alliances*.

From this we see that the essential difference between the Alliance and the Entente is *the question of military obligations*. When there is an Entente between the States, X and Y, they are agreed on a certain line of policy with regard to the actions of another State, Z, who may be hostile to X. But this does not go so far as to imply that Y's army will come to the support of X if and when X declares war against Z. It does not *prevent* Y's army from supporting X; but Y can refuse to fight on the side of X, without laying himself open to the charge of violating the Entente between himself and X.

For example, the Entente between England and France, on the question of Morocco (1911), did not in any way bind England to fight against Germany, if France and Germany went to war over this question. Yet, an *Alliance* between France and England, at that time, would have meant that the English army was bound to assist France in such a case.

Having thus clearly laid down the difference between the Alliance and the Entente, the next thing to which we must direct our attention is the network of Alliances and Ententes which has influenced European politics since the Treaty of Berlin (1878). This was the Treaty which was supposed to settle the affairs of Europe, after the Russo-Turkish War; to kill the "Eastern Question" and bury it deep, so that it would never rise up again to be the nightmare of European statesmen.

These Alliances and Ententes, in chronological order, are as follows :—

- (i) 1878. **Austro-German Alliance.**
- (ii) 1882. **Triple Alliance**, resulting from *Italy* joining the Austro-German Alliance.
- (iii) 1886. **Anglo-Italian Entente**, relating to the Mediterranean.
- (iv) 1891. **Franco-Prussian Alliance.**
- (v) 1897. **Austro-Italian Entente**, relating to the Balkans.
- (vi) 1900. **Franco-Italian Entente**, relating to the Mediterranean.
- (vii) 1902. **Anglo-Japanese Alliance.**
- (viii) 1904. **Anglo-French Entente**, relating to Egypt and Morocco.
- (ix) 1907. **Anglo-Russian Entente**, relating to Asia, and spheres of influence in Persia.
- (x) 1909. **Russo-Italian Entente**, relating to the Balkans.
- (xi) 1912. **Balkan Alliance**, between Bulgaria, Servia, Greece and Montenegro.

Now, casting our eyes over this list, the most curious thing we observe in it is the vacillating—we might almost say “shuffling”—conduct of Italy; at first joining Austria (her hereditary enemy) and Germany, and then establishing Ententes with England, France and Russia. But it would be unfair to blame Italy for this; because foreign policy, with Italy, is strictly a matter of business, not of sentiment. She has been taught in a hard school that in international politics her friends are only less dangerous than enemies; and the eternal laws of geography have made her policy, of necessity, opportunist and complicated. From 1848 to 1870 she was struggling hard to achieve her national unity; and each step forward was purchased at a terrible cost of men, treasure and *moral*. During these years Austria fought her three times (1849, 1859 and 1866); and although Napoleon III. helped her, on the battlefield, in 1859, still *he* gained more than she did, by the victory. And it was only in 1870 that she took advantage of the Franco-Prussian War, to make Rome her capital.

It must be noted that Italy, by reason of her geographical position, is a *maritime power*; and it is dead against her interest that any other Power should dominate the Mediterranean by a navy of great superiority, by colonies on the North African coast, or by a commercial monopoly in the Near East. Now France, having already had Algeria, took Tunis in 1881; and this is

why we see Italy joining Austria and Germany in 1882. And not only did she join her hereditary enemy heartily, in this Triple Alliance ; but she also pledged herself to send two army corps, through the Tyrol, to attack France, if called upon by the other two allies to do so. In 1911, Italy discovered that Germany was going to seize the harbour of Tobruk, in Tripoli ; and this proved too much for her. She forestalled Germany ; landed an army in Tripoli ; and declared war against Germany's secret ally, Turkey.

It was this which put an end to the Triple Alliance of 1882, and kept Italy from joining the Central Powers in the Great War.

2

That Triple Alliance of 1882 was the oldest of Continental Alliances. It was formed by Germany, with the express object of consolidating diplomatically the military successes she had won in 1866 and 1870, and so to secure the diplomatic mastery of Europe.

But, in 1911 and 1912, when Italy found that Austria was trying to turn the Adriatic into an Austrian water preserve, and that Germany was scheming to rob her friend Turkey of Tripoli, Italy began to think that, after all, a man's skin is nearer to him than his shirt, and that the first duty of any State is to fend for itself.

In 1882 there was only one Alliance in Europe. Since 1891 there have been two. Since 1892 there have been three.

In 1912 France and Russia were allied ; England and Japan were allied ; and there were also Ententes established between England and France, on the one hand, and England and Russia on the other. France, Russia and England constituted the Triple Entente. It was then that the German statesman, Von Bülow, said : " The Triple Alliance and the Triple Entente are the pillars of European equilibrium."

The first " rift within the lute " was when, in 1883, Italy suggested that Germany should guarantee the interests of Italy in the Mediterranean. Germany refused ; and then Italy made special agreements with other European Powers, by which her interests in the Mediterranean were secured ; namely, with England, in 1886, with France, in 1900, and with Russia, in 1909.

The **Triple Entente** had its beginning in the Franco-Russian Alliance of 1891. Now how did such an Alliance come to be formed between two countries so essentially different in their forms of government ?

Well, it has often been said that "politics make strange bed-fellows"; and in this case the old saying proved true. Different as they were in other respects, France and Russia had *one* common interest—the re-establishment of European equilibrium. At the Treaty of Frankfort (1871), France was the vanquished country. At the Congress of Berlin (1878), Russia was the vanquished party. In both cases, Germany—as represented by Bismarck—was the victor. It was only natural that mutual sympathy, as well as a common object of hatred, should lead to a *rapprochement* between the two vanquished. Hence the defensive Alliance of 1891, completed in 1892 by a military convention.

The Anglo-French *rapprochement* in 1904 sprang from similar causes; the irritation generally provoked in England by Germany insisting on interference in every political question that came up, and Anglo-German trade rivalry. There was *no military convention* signed between England and France at this time; but it cannot be denied that the two General Staffs of the Entente Armies studied, in every detail, the eventual co-operation of their respective military forces. And in every political conflict from 1904 to 1914, the solidarity of the compact between France and England declared itself, especially in the "Agadir affair," in 1911.

The Entente between England and Russia proceeded from an honest desire on the part of England to put an end to the Asiatic quarrels between the two countries, and to create a counterpoise to the Triple Alliance. It was helped on by the Entente already formed between England and France; and it was first publicly made known in 1907.

And now let us consider how the balance-sheet stood between the Triple Alliance and the Triple Entente, in the years immediately preceding the Great War.

3

Germany.

Before the accession of Kaiser William II., German policy in the Middle East was what we may call an *indirect*

policy ; but after his dismissal of Bismarck (1890) it became a *direct* policy.

To consolidate the German Empire, Bismarck had to struggle in Europe only. And this is the reason why his policy had always been exclusively European. For Bismarck, the Balkans were not in "Europe"; he constantly denied that Eastern affairs possessed any interest for Germany. For him, as he said, "the whole Eastern Question was not worth the bones of one Pomeranian grenadier." And although he made use of the East for his European policy, he cannot be said to have had an Eastern policy. His making use of the East clearly appeared at the Treaty of Berlin (1878), when he secured the Austrian Alliance by promising Austria that he would support her against Russia, and giving her a good share of the Turkish spoils : Bosnia, Herzegovina, and the *sandjak* (province) of Novi Bazar, on the direct road from Austria down to Salonika.

But after the dismissal of Bismarck, the Middle East became a prime preoccupation of German policy. The immense trading-house of Germany discovered in Turkey a wonderful business field, where German commerce went on realising magnificent profits for over twenty years. Germany had the tremendous advantage of having no Mussulman subjects, such as France and England had ; and William II. was not slow to seize this, by promising to the Turkish Mussulmans a higher degree of liberty, equality and fraternity than were ever enjoyed by the Mussulmans under England in India, or under France in Algeria.

Germany made use of Turkey in order that Turkey might be of use to her. She made use of Turkey in the affairs of Crete and Armenia. She made use of Turkey to open up outlets for her own metal industry and her banks. And, most important of all, she looked upon Turkey as a reserve military force, as the right wing of the armies of the Triple Alliance in case of a European war. Therefore, when, in 1912, the Balkan Alliance rose against Turkey, German officers and German guns fought on the side of the Turks.

But, all this time, Germany's Allies were rather "letting her down." Austria *annexed* Bosnia and Herzegovina in 1908 ; that is, openly robbed Turkey of this territory, and incorporated it in the Austrian Empire. Italy grabbed the Turkish Province of Tripoli in 1911 ; and on neither occasion did Germany raise a finger to help Turkey or to reprove her own plundering

Allies. Surely Turkey might have said, with Falstaff, "Call you that backing of your friends? A plague upon such backing! Give me them that will face me!"

Austria-Hungary.

It is very doubtful whether Austria would have ever taken up an Eastern policy if it had not been forced upon her. She had quite enough to do in keeping her own house in order, with its many mutually antagonistic nationalities; but she could not help getting mixed up in the Balkan Question. During three-quarters of the last century she gave very little heed to what was passing in the Balkans. And it was only *when she saw that Bismarck had resolved to cast her out of Germany* (1866) that she took up an Eastern policy. Count Bismarck saw this, so he offered her a slice of the Balkans (Bosnia and Herzegovina) at the Berlin Treaty in 1878. And it is only from this date it can be correctly said that Austria has had an Eastern policy.

The Eastern policy of Austria in the Balkans manifested itself in three ways:

- (a) By occupying and exploiting Bosnia and Herzegovina, which were handed over to her by the Berlin Congress;
- (b) By active penetration in Albania, and particularly along the Adriatic Coast of that Turkish province;
- (c) By actively taking part in "intervention policy," or reform policy, in the domestic affairs of the Ottoman Empire.

The result of Austria's policy, in these three forms, was that she made an enemy of Turkey, on the one hand; and, on the other hand, roused the suspicion and stirred up the antagonism of the Balkan States and of Russia. She coveted outlets on the Ægean Sea and the Adriatic; but the Balkan States were determined that she was not going to have them. And Italy, too, kept her eyes wide open, at this time, looking across the forty miles of sea which form the mouth of the Adriatic. Italy and Austria had a separate little Entente, in 1897; both pledging themselves not to interfere in the affairs of Albania. But neither of them trusted the other; and their secret agents went on working in Albania, side by side. When Austria annexed Bosnia and Herzegovina in 1908, she very foolishly returned the *sandjak* of Novi Bazar to Turkey, as a sort of bribe; so that Turkey would not hesitate to recognise the annexation of the

two larger tracts. But there is no doubt she still kept a longing eye on the road to Salonika; and, taking into account the weakness of Serbia at that time, she saw no reason why she should not make a dash for it when a favourable opportunity occurred.

When the war of the Balkan Powers against Turkey began, in October, 1912, the politicians at Vienna decided that if Turkey proved victorious, things would remain just as they were before; but if Turkey were beaten, Austria was to put in a strong claim for a share of the spoils. Anyhow, the one thing that Austria was *not* going to permit was a powerful Slav State stretching across from the Black Sea to the Adriatic; even if it were to be under the rule of the "rogue elephant," Ferdinand of Bulgaria, whom she held by secret treaty in the hollow of her hand. Therefore we see that the *Eastern policy of Austria* before the Great War had two main objects in view:—

- (a) To prevent the formation of a powerful Slav State on her southern frontiers; and
- (b) A forward policy towards the acquisition of Salonika and the Adriatic ports.

Italy.

The only part of the Balkans that interests Italy—as it interested Austria, and for the very same reason—is the Albanian Coast of the Adriatic.

The narrow sea of the Adriatic is not safe for any Power that is not in possession of the two coasts.—Italy is well aware of this; hence her efforts to penetrate Albania, up to the time of the sham Entente of 1897, already referred to. By this, although she tied the hands of Austria with regard to Albania, she tied her own hands as well.

When the Balkan War became certain (1912), Italy found herself in an extremely difficult situation, being at war with Turkey. She knew very well that Germany—the senior partner in the Triple Alliance—stood at the back of Turkey; and if she joined her forces to those of the Balkan States, the German and Austrian armies would come down like an avalanche, sweeping Italians and Slavs into the Mediterranean. She got out of the difficulty by signing peace with Turkey, and keeping the barren shores of Tripoli.

So the Eastern policy of Italy before the Great War may be summed up as follows:—

- (a) Indifference towards Turkey.
- (b) Resolution to limit as much as possible the power of Austria in the Adriatic.
- (c) To prevent any of the Balkan States from becoming too powerful on the Adriatic shores.

Russia.

Of all the Great European Powers, there was none whose interests in the East were more important and immediate than Russia. After struggling for over half a century against the Turks, for herself, and taking from them the northern and eastern shores of the Black Sea, Russia fought against them for the liberation of the Balkan Christians subject to Turkey, and for them waged a fierce war from 1876 to 1878.

Another question—which is, however, rather European than Russo-Turkish—which has always caused enmity between Russia and Turkey is that of the free navigation of the Bosphorus and Dardanelles; that is, Russia being prohibited to take her fleet out of the Black Sea, and to have that communication with the open sea which her creator, Peter the Great, desired for her more than two centuries ago.

Since the time of the Berlin Congress, Russia, in her Balkan policy, always found facing her, the Powers of the Triple Alliance, and Austria in particular. In 1897 Russia made an agreement with Austria, by which each of these Powers pledged themselves to a policy of disinterestedness and *status quo*. Then Russia, in an evil moment for herself, turned her glance to the Far East; whence she returned in 1905, beaten and battered and licking her wounds. In 1908, when Austria annexed Bosnia and Herzegovina, the Russians foamed with rage; especially when Kaiser William II., with his usual want of tact, and mania for melodramatic froth, announced that Germany “in shining armour” would stand by Austria.

When the Balkan War broke out, in 1912, Russia made no move, though she watched with keen anxiety every move that was made on the side of each member of the Triple Alliance. But she quietly strengthened her military forces along her western frontiers, from the Vistula to the mouth of the Danube.

Therefore it will be correct to sum up the Balkan policy of Russia, during the years immediately preceding the Great War, under the following heads:—

- (a) The success of the Balkan Slavs, and the setting up, by means of them, a barrier against Austria.
- (b) The maintenance of Turkey at Constantinople ; as being likely to facilitate the ulterior settlement of the question of the Straits.
- (c) The peaceful settlement of the Balkan Question, for the time being, as Russia was not in a condition favourable to the prosecution of a successful war.

France.

From a purely political point of view, France had no direct interests in the Balkan Question of 1912 and 1913. She had far more important matters to claim her attention ; or, as M. Clemenceau put it, "other cats to lash." France had always kept up friendly relations with Turkey, and never showed that she coveted any part of Ottoman territory. At the same time, France was always the friend of the Balkan Christians. She aided them in their struggles for freedom ; either by military help, as in the case of Greece (1827), or diplomatically, as in that of Servia and Bulgaria. Again, the existing alliance between France and Russia formed another reason why she should sympathise with the Balkan States. But the strongest political reason why France could not afford to ignore the Balkan Question was because *the creation in Eastern Europe of any new Power would introduce one more factor into the balance of forces that France had been constantly endeavouring to bring into a state of equilibrium.* The politics of France have always had a scientific basis, and have never, in modern history, been a hand-to-mouth policy, or a mere guessing of how some particular cat was likely to jump.

Just as Germany was counting on Turkey, so was France counting on the Balkan Federation. When Turkey got her guns from Krupps, the Slav States got theirs from Creusot and St. Etienne. And France judged rightly that a strong Slav State in the Balkans would be far more likely to join the Triple Entente than the Triple Alliance.

We may therefore sum up *the Eastern or Balkan policy of France, before the Great War*, as :—

- (a) To support her ally, Russia.
- (b) To uphold the union of the Balkan States.
- (c) To bring about a peaceful settlement in South-Eastern Europe.

England.

The Eastern policy of England, in so far as Turkey is concerned, has always been a variable quantity ; and her relations with Turkey have passed through contradictory phases. On more than one occasion, Great Britain has protected Turkey against the enemies of the Ottoman Empire (1854 and 1877) ; at other times she has backed the claims of the Armenians and the Balkan Christians against Turkey. And, generally, the Eastern policy of England cannot be defended against the charge of opportunism.

From the very first years of the twentieth century, England was much disquieted by the progress of Germany in Turkey, and in the rest of the world ; but, to guard against this, she often hesitated between her two lines of policy, whether to be with the Turks, or against them. In the beginning of October, 1912, she was rather inclined to be on the side of the Turks ; and the Grand Vizier (Turkish Prime Minister), Kiamil Pasha, showed himself particularly well-disposed towards England, especially in matters relating to Egypt.

But the necessities of the general policy brought England back to a less pronounced attitude, waking up the lively sympathies which she had shown for the Balkan States at former periods. She did her best to prevent a war between the Balkan States and Turkey ; and when it was over she accepted the consequences in good faith, and used her influence to prevent the conflict from becoming general. It may be truly stated that the Eastern policy of England and France, before, during, and after this war (1912) was absolutely impartial, disinterested and honourable. Still, a fixed principle in the English policy was a desire that Constantinople should remain in the possession of Turkey.

English policy at this period rested on the following broad principles :—

- (a) To secure normal conditions for the existence of the Balkan Alliance ;
- (b) To keep the question of the Straits (Bosphorus and Dardanelles) in the background ; and
- (c) To prevent the flames of war from spreading to the rest of Europe.

From what has been already said, it will be seen that the views of the Powers, had it come to a question of voting, would have been expressed somewhat as follows :—

- (a) For the maintenance of European Peace : Unanimous.
- (b) For the maintenance of the Turks at Constantinople : Unanimous.
- (c) For the restoration of Turkey to the position she occupied before the Balkan War : Germany only. Austria would not vote one way or the other.
- (d) For the creation of a strong Balkan Federation : Russia, France and England. Against : Germany and Austria. Italy doubtful, or would not vote.

The tremendous change which took place in Eastern European politics in 1912 has not been yet appreciated at its full value as the precursor of the Great War.

Before the year 1912 it was the rest of Europe that played the principal part in Balkan affairs. But in this year the Balkan States themselves took the bit between their teeth, and Europe lost all direction of them. They cared just as little for European threats as for European advice and counsel. They had had long experience of the European Powers, their selfishness, jealousy and treachery ; and they now understood that if they trusted to these Powers to secure the triumph of their cause, either the triumph would be incomplete, or they would have to pay too dear for it ; so they resolved to act for and depend upon themselves. They buried the hatchet, and stood shoulder to shoulder ; declared war against their hereditary enemy, and won a most decided victory.

Now, if only they had stood faithfully by each other, in peace as in war, it is very probable that the awful calamities which have since fallen on the civilised world might have been avoided. But the ambition of that wicked and treacherous relic of the accursed house of Bourbon, Ferdinand of Bulgaria, and the weakness of Kaiser William's brother-in-law, the King of Greece, neutralised all the benefits of victory and tore the Balkan Alliance to pieces. Impelled by Austrian intrigue, Bulgaria turned her arms against Serbia ; and, influenced by Germany, Greece went on the side of Bulgaria. Roumania mobilised (1913) ; an all-powerful Bulgaria, backed by Austria, on her

southern frontier, would be a constant menace to her. The European Powers came on the Balkan stage again ; but now even the Turk snapped his fingers in their face, and openly took back Adrianople, which he had pledged himself to hand over to Bulgaria, and which Bulgaria had already occupied. Albania was made an independent Kingdom ; an obscure, beggarly German princeling was raised to its throne, on which he sat unsteadily for six short months.

Naturally *Serbia* was weakened by her first fighting against Turkey, in the Balkan Alliance, and her second fighting against Bulgaria. Austria was not slow to note this fact ; and she only waited for the first opportunity to sweep Serbia out of her way. She thought that a favourable opportunity had arisen in the end of June, 1914, when the Archduke, the heir to the Dual Monarchy, was murdered at Serajevo. Then followed the frenzy and lunacy of statesmen and peoples, the horrors of the Great War, and the suicide of the White Man.

PART III

EXAMINATION PAPERS, FULLY ANSWERED

HAVING studied, as laid down, the Military Geography of the countries already dealt with, the student will now be able to take up and master the Military Geography of other countries. In the succeeding Examination Papers he will find a series of questions, answered fully, on the Military Geography of all the countries in the world. He would do well to make an attempt at answering each question himself first, then check off his answer by comparing it with the answer given.

These questions have been compiled with great care, not only for the use of those who are going to compete in Army and Staff College Examinations, but also for all those who wish to become proficient in Military Geography. Many of the questions are given, word for word, as they have been set in the Army and Staff College Entrance Examinations; others have been slightly changed, and applied to countries different from those mentioned in the actual Examination Papers.

It is scarcely necessary to remind the student that a good many problems which may be set, and which have been set, on Military Geography, admit of more than one solution; and therefore he need not be at all disheartened or disappointed if what he considers a good, sound solution does not agree in every particular with those given here.

The answers to the questions referring to those countries in which military operations took place during the Great War have been left exactly as they were written for the first edition of this book, 1908; and the proof of the general correctness of the Answers and Solutions consists in the fact that *the actual operations, planned and carried out by the General Staffs of the Armies of France, Germany, Russia, Turkey and Austria, during the Great War, differ but very little from the forecasts to be found in the Answers to these papers.*

EXAMINATION PAPERS

I

1. Describe the boundaries of Egypt; and draw a sketch map showing roughly, Sollum Gulf, El Arish, Wadi Halfa, Kassala, Fashoda, Hannek, Berber, El Obeid, Abu Klea and the line of railway from Cairo to Khartoum.

2. A body of Russian troops is sent from Moscow to Samarkand by the Orenburg-Tashkent Railway; at the same time, another body of troops is sent from Tiflis by the Trans-Caspian Railway, to join them. How long will each body of troops take to get to their destination, and what places will they pass through on their journeys, respectively?

3. A steamer leaves Gibraltar for Durban, and has to call at all the important British ports on the way, beginning at Bathurst. What places will she call at? Where can she coal? And from what places could she send a message by cable to London?

4. Draw a map of the British possessions between 90° E. and 100° E. and between 10° N. and 30° N.

5. What are the principal ports round the shores of the Mediterranean Sea? What are the principal islands in the Mediterranean? To whom do they belong, and what is the principal town in each?

6. Draw a sketch map of the Austro-Hungarian Empire, marking the course of the Danube, the principal military centres, and the principal lines of railway east of Vienna.

7. Where are the following places, and how are they remarkable: Valentia Island, Kolberg, Rodosto, Castries, Ludwigshaven, Spezzia, Bender, Hanoi, Zaila and Karikal?

8. Describe the possible lines of Russia's advance from Trans-Caspia on India.

9. What are the distances between the following places: Colombo to Singapore; Aden to Bombay; Gibraltar to Malta; Suez to Suakin; Paris to Vienna; London to Moscow?

10. What are the principal divisions of Australia, and the capitals and chief ports of each?

11. Give an account of the principal railways and canals in Canada.

12. What is the course of (a) the British cables which go to South America, (b) the cables to Labuan, Hong Kong and Java, (c) to Karachi?

ANSWERS

I

Question 1.—Egypt consists of three distinct parts: the delta of the Nile; a narrow strip of fertile country, watered by the Nile, from Cairo to Wadi Halfa 22° N. (560 miles in a direct north-and-south-line); and the deserts beyond this fertile strip, the Libyan on

the west, the Nubian and the Arabian on the east. Nubia and the Egyptian Sudan stretch south of Wadi Halfa, to 5° N. at Gondokoro, on the Nile. South and south-east of this are Uganda and British East Africa. The western boundary of Egypt begins on the Mediterranean coast, at Sollum Gulf, 25° E. long.; runs south-west till it strikes the Tropic of Cancer at Hejar-es-Sud; then south-east, meeting the parallel of 15° N., 650 miles direct west of Khartoum; then south-south-east, to meet the northern boundary of the Congo Free State at 5° N. near N'dorama; from here generally west to meet the boundary of Abyssinia at 6° N. and 35° E. From here the boundary keeps to the 35th meridian until 80 miles east of Senaar (on the Blue Nile); then goes north-north-east, meeting the western shore of the Red Sea at 18° N. On the east of the desert and Peninsula of Sinai, its boundary is a straight line from Rafah 34° E., to Akabah, north of the gulf bearing this name, and east of Suez.

In drawing the sketch-map, remember that the distance from Wadi Halfa (where Egypt proper is supposed to end) to Cairo, 560 miles, is the same as the distance from Wadi Halfa to Ras Kasar, where the Egyptian boundary meets the Red Sea, 120 miles south-east of Suakin. And this is also the distance, in an almost direct east-and-west line, from the Gulf of Sollum to Rafah, and from Fashoda (on the Nile, at 10° N.) to Berber, where the new railway from Port Sudan meets the Nile. The places mentioned may easily be found on any ordinary map of Egypt. Kassala is close to the Abyssinian frontier; half-way between Massowah and Khartoum. Hannek is at the third cataract, near where the railway stops, 20° N.

Question 2.—See my map of Trans-Caspia and Central Asia (attached) for a complete answer to this question. From Tiflis to Baku is 300 miles; from Baku across to Krasnovodsk, 160. Mr. Dobson, special correspondent of the *Times*, said that "the journey, Petrograd, Moscow, Tsaritsin, Baku, Samarkand, takes 10 days 23 hours 30 minutes." This meant going down the Volga from Tsaritsin by steamer, and so on to Baku. This route could still be used in case the railways got blocked or broke down.

Question 3.—Freetown, Cape Coast Castle, Akra, Lagos, Akassa, Bonny, Walfisch Bay, Port Nolloth, Cape Town, Port Elizabeth and East London.

Freetown, St. Helena, Cape Town or Simon's Town.

Freetown, Akra, Lagos, Akassa, Walfisch Bay, Cape Town.

Question 4.—This is another way of asking to draw a map of the British possessions east of the Ganges. Copy from any good atlas.

Question 5.—Beginning at the west: Gibraltar (Br.), Malaga, Cartagena, Alicante, Valenca, Tarragona, Barcelona, all Spanish; Cette, Marseilles, Toulon, Nice, all French; Genoa, Spezzia, Leghorn, Civita Vecchia, Gaeta, Naples, Messina, Brindisi, Ancona, Venice, all Italian; Trieste, Fiume, Pola, Ragusa and Cattaro, all Austrian; Corfu, Nauplia, Poros, Patras, all in Greece; Salonika, Dédé Agatch and Smyrna, in Turkey; Alexandretta, Beyrout, and Jaffa, in the

Levant ; Port Said, Damietta, Alexandria, in Egypt ; Benghazi, in Tripoli ; Biserta, Bona, Phillipeville, Algiers and Oran, in Algeria ; Ceuta.

Balearic, Spain ; Palma and Port Mahon. Corsica, France ; Ajaccio. Sardinia, Italy ; Cagliari, Porto Torres. Sicily, Italy ; Palermo. Malta, British ; Valetta. Candia (autonomous) ; Candia (best harbour, Suda Bay). Cyprus, British ; Nikosia ; harbour, Larnaka.

Question 6.—See pp. 127, 128, as a hint how to answer this question.

The military centres are : Cracow, Lemberg, Vienna, Prague, Przemyśl, Josephstadt, Kaschau, Pressburg, Buda-Pesth, Grätz, Innsbruck, Hermannstadt, Serajevo, Temesvar and Agram. All are the headquarters of Army Corps.

Komorn is a very strong fortress on the Danube, below Pressburg. Gorz watches the frontier opposite the Italian fort of Udine, north of Trieste. Arad, above Temesvar, is a huge entrenched camp. Semlin, at the junction of the Save and Danube is an important strategical point ; and Eger, holding the gap between Erz-Gebirge and the Böhmer Wald joining the valleys of the Upper Main and Elbe, is a position of great military importance.

Railways east of Vienna are : (1) Pressburg, Miskolcz, Kaschau, Cracow. (2) Buda Pesth, Grosswardein, Klausenburg. (3) Buda-Pesth, Temesvar, Orsova. (4) Buda-Pesth, Neusatz, Semlin, Belgrade.

From Vienna to Belgrade, by rail, is 400 miles ; to Trieste, 370 ; to Cracow, 260.

Question 7.—West of Co. Kerry, Ireland ; cable station. Fort on the Baltic Coast, between Stettin and Danzig. Principal port on the north of the Sea of Marmora. In the island of St. Lucia ; finest bay in the West Indies. Opposite Mannheim on the Rhine ; large chemical and aniline works ; great trade. Principal station of the Italian navy. Strong fortress holding the line of the Dniester (S.W. Russia). Tonking (French). English port in the Gulf of Aden, on the African side : caravan route to Harar and Adis Ababa (capital of Abyssinia). One of the French possessions in India, south of Tranquebar.

Question 8.—See *my map* of Trans-Caspia. (Also see answer to Question 2.)

(a) From Krasnovodsk to Merv and Khushk by rail ; thence to Herat. From Herat either (1) Farah, Ghirishk, Kandahar, Quetta ; or from Herat ; (2) up the valley of the Hari-Rud, and by the Unai Pass to Kabul, the Khyber Pass and Peshawar.

(b) From Samarkand to Termez, cross the Oxus, to Mazar-i-Shariff ; over the Bamian Pass to Kabul.

(c) Over the Baroghil Pass into Chitral and Kashmir.

(a₁) From Herat to Chaman is 330 miles ; difficult for wheeled transport ; little water.

(b₁) Over 600 miles of barren and mountainous country ; almost impossible from October to March.

(c₁) Very difficult, but most dangerous to British India.

If China permitted it, Russia could go over the Terek Pass, into Chinese Turkestan, and move from Yarkand down on to Kashmir (Ladakh).

Question 9.—1,560 miles ; 1,662 miles ; 980 miles ; 750 miles ; 840 miles ; 1,400 miles.

Question 10.—The answer to this question can be got from any ordinary atlas.

Question 11.—The Grand Trunk Railway, from Portland to Chicago, crossing the St. Lawrence, by the Jubilee Bridge, to Montreal, Hamilton ; crossing the river St. Clair by a tunnel. It connects all the important towns of Quebec and Ontario with those of the United States.

The Inter-Colonial Railway, from Halifax to Montreal, passes through Truro, Moncton, Newcastle, Bathurst and Dalhousie.

Canadian Pacific Railway ; headquarters, Montreal. From Halifax, by St. John and Sherbrooke, to Montreal. Then through Ottawa, Renfrew, Sudbury (junction for Sault Ste. Marie, on Lake Superior), Port Arthur, Rat Portage, Winnipeg, Brandon, Dunmore, Calgary, Kicking Horse Pass (5,330 feet high), Kamloops, New Westminster. The whole distance is 3,100 miles. From Quebec to Vancouver (by mail train) takes 3½ days. At Carleton Junction, beyond Ottawa, a branch goes to Buffalo and Detroit ; Portage la Prairie is the junction for the Northern Railway. A branch also runs from Regina northwards, another from Calgary southwards.

(The shortest route to New Zealand and Australia is by the Canadian Pacific Railway. The distances are : Liverpool to Quebec, 2,600 miles ; Quebec to Montreal, 172 ; Montreal to Vancouver, 2,895 ; Vancouver to Honolulu, 2,965 ; Honolulu to Auckland, 3,815 ; Auckland to Sydney, 1,281. The P. and O. Suez Canal route to Sydney is longer than this by more than 1,000 miles. It is also far more expensive.)

An account of the more recent railways in Canada is already given in this book, pp. 72, 73.

The distance between Montreal and Vancouver is 600 miles less than that between New York and San Francisco.

Canals : (1) The Lachine, from Montreal to Lachine ; (2) Soulanges, connecting Lakes St. Louis and St. Francis ; (3) Cornwall ; (4) Welland, from Port Dalhousie to Port Colborne ; (5) Sault Ste. Marie ; (6) Rideau, Montreal and Ottawa ; (7) Chambly ; and (8) Erie Canals.

Question 12.—

(a) Valentia Island to Halifax, Bermudas, Turk Island, Jamaica, and British Guiana. Land's End, St. Vincent, Pernambuco. Lisbon, Madeiras, Cape Verde Islands, Pernambuco. Lisbon, Canaries, St. Louis, Pernambuco.

- (b) Singapore, Bruni, Labuan, Hong Kong, Singapore, Saigon, Hong Kong. Singapore to Batavia, in Java.
 (c) Down the Persian Gulf, from Fao (at the mouth of the Shatt-ul-Arab) and Bushire. From Aden to Karachi.

II

1. How far is it by rail, between the following places :—

- (a) Moscow and the largest port on the Black Sea ;
 (b) Batoum to Baku ; and Baku to Krasnovodsk ;
 (c) London to Edinburgh ;
 (d) Paris to the largest naval station (French) on the Atlantic coast ;
 (e) Paris to the principal French naval station on the Mediterranean ;
 (f) Berlin to the largest commercial port of Germany ;
 (g) Paris to Vienna ;
 (h) Vienna to the largest Austrian commercial port on the Adriatic ; and
 (i) Madrid to Lisbon. (Give the answers in English miles, and in round numbers.)

2. Owing to a dispute between Great Britain and Turkey, a Turkish army 250,000 strong, is to be concentrated as near as possible to the Egyptian frontier. No troops must be taken from Turkey in Europe. From what places would the troops be taken ? Where would they be concentrated ? What would be the best way to bring them to the place of concentration ?

(NOTE.—A Turkish Army Corps may be taken as 40,000 strong.)

3. Where are the following places, and how are they remarkable : Dédé Agatch, Syra, Newbiggin, Ingoldstadt, Kilif, Wesel, Zabern, Brenner Pass, Dariel Pass, Cette, Bengazi and Tultcha ?

4. State fully what constitutes the strategic importance of the following places :—

Eger ; Belfort ; Sofia ; Coblenz ; Kustrin ; Prisrend ; Herat ; Samara ; Strasburg ; and Regensburg.

5. In case Austria wished to invade Roumania and the Slav States of the Balkan Peninsula, what would be her best lines of advance ? At what points might she expect to meet opposition ?

6. Thirty thousand British troops are sent from England, *via* Liverpool, Canada and the Pacific route, to Hong Kong, to take part in an Anglo-Russo-Japanese War. The Suez Canal being rendered useless, 30,000 more are sent round by the Cape, with orders to take in detachments at Cape Town and Colombo, and proceed to Singapore.

How long would the voyage take in each case ? Name the important places passed. Give the distances, in round numbers. (The first body of troops have orders to touch at Yokohama.)

7. Draw a sketch-map of the Nile, from Siout to Fashoda, marking the principal towns, trade-routes and railways. And show the position of : El Karjeh, Fasher, Kassala and Abu Klea.

8. What are the principal fortified places on the shores of the Baltic Sea and its inlets? How are they situated? To what countries do they belong? In what do their strategic importance consist?

9. Give, in order, the principal passes over the Balkans, from east to west. Which of them can be crossed by an army with its wheeled transport? Which only by a force with pack animals? What important places do they lead from and to?

10. What are the principal harbours and fortified ports in Great Britain? How far is each of them from London?

ANSWERS

Question 1.—(a) 693. (b) 560; 164. (c) 397. (d) 387. (e) 540. (f) 177. (g) 837. (h) 370. (i) 469.

Question 2.—I should move the Corps of Erzingan and Diarbekir by Urfah and Aintab (a good marching road) to Aleppo (or Haleb), Damascus; then by rail to Maan. The Sana Corps (South Arabia) I should embark at Hodeida, and send by sea to Akabah. The Damascus Corps push on by rail to Maan. The Baghdad Corps by boat to Basra, on the Shatt-ul-Arab; from here by sea to Akabah. The Smyrna Corps by sea to Jaffa; and the Skutari troops by rail to Eregli, thence to Adana, and by sea to Jaffa or Rafah. Extra troops might be taken from Tripoli, embarking at Benghazi.

We cannot assume that war has been declared; therefore the Turkish troops may be sent, as above, by sea. The concentration would be on a line from Rafah to Akabah.

(With the exception that the Diarbekir Corps went to Baghdad, and the Sana Corps to attack Aden, *these were exactly the movements prescribed by General von der Goltz for the other Turkish Army Corps, against Egypt, in the end of 1914.*)

Question 3.—On the west of the mouth of the Maritza; a railway leads from here to Salonika and Constantinople. One of the two lines of least resistance into Turkey by the Ægean Sea. A busy Grecian port in the Cyclades. The Cable Station on the coast of Numberland from which cables go to Norway and Denmark. On the Danube in Bavaria. Here the main railway from Middle Germany crosses to the arsenal of Augsburg; it is very strongly fortified. On the Oxus, between Termez and Khwaja Saleh. Wesel, entrenched camp just as the Rhine enters Holland. Would be made the base for an attack on Holland or Antwerp. Commands the principal pass across the Vosges, west of Strasburg. Commands an advance from Italy, up the Adige Valley, against Innsbruck. Leads over the Caucasus from Vladikavkas to Tiflis. Certe, seaport on the south coast of France; will be of strategical importance when the Bordeaux-Certe ship canal is completed. Principal seaport of Tripoli. Most important Roumanian city in the Dobrudscha, commanding the Sulina mouth of the Danube.

Question 4.—Commands the gap by which an advance could most easily be made from the Valley of the Upper Main to the Upper Elbe.

Commands the gap between the Jura and Vosges Mountains, the easiest approach from Germany into France.

Command the defile of the Isker, and the main line of advance from Serbia into the Valley of the Maritza.

At the junction of the river valleys of the Rhine, Moselle and Lahn.

Defends Berlin against an attack from the east, and holds the middle Oder.

The principal strategical position in the Tchar Dag, commanding the head of the Vardar Valley, also the Valley of the Drin.

Most important position on a direct line of invasion from Merv against Kabul or Kandahar.

Bridgehead on the Volga, on the railway from Moscow to Orenburg and Tashkent.

Holds the line of the Rhine opposite the debouches from the Black Forest.

Half-way between Strasburg and Vienna, on the Danube; important road and railway centre.

Question 5.—Austria wishes to invade Roumania, Bulgaria and Serbia. Either Roumania will cross the Danube and unite her forces to those of Serbia and Bulgaria; or she will stay at home and defend her own frontier. The latter course is the more probable. In this case then Austria will mass the greater part of her army in Bosnia, cross the river Drina into Serbia, and seize Belgrade. By this stroke she at once gives herself a good safe base of operations, and has turned the line of the Danube. But while she is carrying out this operation, she watches the Vulcan, Rotherthurn, Tomas and Gyimes Passes with the corps from Hermannstadt and Temesvar, placing a corps of observation at Orsova. In case Roumania wishes to make a diversion in favour of her allies, Serbia and Bulgaria, Austria moves down her Galician Corps, with Czernowitz as a base, and turns the line of the Sereth. Against this scheme generally it may be objected that an obstacle, the Danube, divides the Austrian forces; but this is easily surmounted by the connection Semlin-Belgrade, as also by the fact that Austria holds both sides of the Danube down as far as Orsova.

Austria would be opposed on the Timok by the united Bulgarian-Serbian forces; by the Stara Planina Range, backed by the strong positions of Belogradchik, Slivnitza and Sofia; in Roumania, by Crajova, the line of the Aluta, Ploiesti, and the immensely strong position of Bucharest.

What actually happened in the Great War was that Bulgaria sided with Austria, and Greece was ready to stab Serbia in the back. On July 29, 1914, Austria opened the campaign in the Balkans by the bombardment of Belgrade. But it was not until November that she succeeded in occupying it; and even then the occupation was but short and troubled. She did *not* mass all her forces in Bosnia and cross the Drina into Serbia. She crossed the Save at

Schabatz, with the greater part of her forces; and she *did* cross the Drina, at Zvornik, with about one-third of them. On August 15, the Austrian army in Serbia was attacked by the main body of the Serbian army; *cut off from its line of communications with Schabatz (where it had crossed the Save)*, and driven back across the Bosnian frontier, with heavy loss, after three days of stubborn and terrific fighting, under a sun which equalled tropical heat.

In October 1916, Mackensen attacked Serbia; but he did not attack through Bosnia. His reasons for this were political. Bulgaria had joined the Central Powers on October 5; so Mackensen determined to get into touch with his new ally as soon as possible. Having reduced Belgrade by his heavy gunfire, he dashed across the Danube at and below Belgrade. Nish, the old capital of Serbia, fell on November 6; the Bulgarians had already taken Uskub, in South Serbia; so there was nothing left for the Serbian army but retreat.

Question 6.—Liverpool to Quebec, by sea; 2,600 miles, 6 days. Quebec to Vancouver; 3,067 miles, 5 days. Vancouver to Shanghai; 4,000 miles, 14 days. Shanghai to Hong Kong, 800 miles. Including the calling at Yokohama, this would take 32 days.

From England to the Cape; 6,000 miles, 21 days. Cape to Colombo; 5,000 miles, 17 days. Colombo to Singapore; 1,500 miles, 5 days. This would take about 42 days.

Question 7.—This question has been treated in the first paper.

The trade-routes are: (1) Suez, Cairo, Ghizeh, Siwah, Tripoli, etc.; (2) Kosseir, Keneh, El Kharjeh; (3) Assouan, Berber; Khartoum; (4) Suakin, Khartoum, El Obeid, Fasher; (5) Massowah, Kassala, Senaar, El Obeid.

Question 8.—Bomarsund, Sveaborg, Kotka, Viborg, Kronstadt, Reval, Port Baltic and Libau; all Russian. Memel, Pillau, Danzig, Kolberg, Swinemunde, Stralsund and Kiel; all German. Helsingor, Denmark. Malmo, Karlskrona and Kalmar; Sweden.

Question 9.—Nadir Derbend, passable; Khoja Balkan, passable; Kazan, difficult; Hainkoi, passed by Gourko, 1877; Travna, difficult; Shipka, passable (but steep on south side); Troian, passable; Baba Konak, passable. The first two connect the "Quadrilateral" with Yamboli, Kharnabat and Burgas. The next three connect Tirnovo and Selvi with the Valley of the Tundja. The Baba Konak connects Etropol and Sofia.

Question 10.—The forts in the immediate vicinity of London such as Chatham, Sheerness, etc., may be omitted. Portsmouth, 73; Southampton, 79; Devonport and Plymouth, 240; Bristol, 118; Milford Haven (strongly fortified), 285; Glasgow, 402; Holyhead, 264; Newcastle, 272; Edinburgh, 397; and Liverpool, 200.

From Liverpool across to Hull, by rail, is 130 miles.

III

1. If another Crimean War took place, and Russian troops were sent from Moscow to Sebastopol, how long would it take by rail? Mention seven important places the troop-trains would pass through on the journey. What is the other important Russian Naval Station on the Black Sea, and how is it situated?

2. Draw a sketch-map of the Danube, marking its tributaries, and all the important places on its banks.

3. If Russia were to declare war against Austria, what would be Austria's first line of defence, and Russia's best line of advance? If Roumania went on the side of Austria, what would be Roumania's best line of defence? And if the Russians were beaten back, and pursued by Austria and Roumania, what line should they hold, and at what points?

4. In the case of an European war between France and Germany, Germany violates the neutrality of Belgium, and seizes ANTWERP by a *coup de main*. France retorts by violating the neutrality of Switzerland and sending an army of 250,000 men into that country. Point out the strategical advantages which would be gained by each of the belligerents, their lines of advance, and the points at which they might expect to meet most serious resistance.

5. When the Panama Canal is completed, what will be its principal advantages, commercial, strategical, or otherwise, to Great Britain? What port in Australasia will be then nearest to Southampton? What will be its distance from Southampton by the new route, and by how much shorter will it be than the present route by sea?

6. A coasting vessel goes round Africa, beginning at Bathurst and ending at Massowah. It calls at all the ports on the way, buying and selling. Mention all the ports in order, and say what coinage is used in each for the transaction of business.

7. Owing to a rebellion in Yunnan and the violation of the Burmese frontier by China, a British force is to be sent, as quickly as possible, to the Yunnan frontier. It is arranged that the force shall enter Yunnan in three columns. How should the troops be sent, and at what railway termini would they get out? And how long would it take a regiment from Peshawar to get there?

8. Draw a sketch-map of the Canadian Pacific Railway; and where would passengers, coming by it from Vancouver, change for San Francisco, Washington, New York and Boston?

9. If the coalfields in England were exhausted, and we could get no coal from any European nation, how could we be best supplied with coal? Anticipating a naval battle in the neighbourhood of Java, a large fleet of ours is sent there. What would be the most convenient coaling stations for the use of this fleet?

ANSWERS

Question 1.—Tula, Orel, Kursk, Kharkov, Alexandrovsk, Bielgorod, Simferpol. Calculating an average of 20 miles an hour for troop-trains (a rate which was kept up during the Manchurian War), 800 miles would be got over in 40 hours. Nikolaiev, at the mouth of the Bug.

Question 2.—This can be copied out of any good atlas. It is only the important places on its banks which are asked for.

Question 3.—It will be necessary, first of all, to go carefully along the Russo-Austrian frontier. The Pruth leaves Austria 20 miles south-east of Czernowitz, at the small town of Noyoseliza, and here is where the frontier begins. From here it runs almost north to the Dniester, passing by the Russian fort of Khotin; then along the line of the river Podhorze, turning to the north-east above the Austrian town of Tarnopol. It crosses the rivers Styr and Bug, and then runs along the right bank of the San, meeting the Vistula near Radomysl. From here it runs westwards along by the Vistula, until it meets the German frontier at Myslowitz, in Silesia.

Russia has the advantage of a re-entrant frontier; but in moving south, from the direction of Poland, she would be first of all met by the chain of strong places, Cracow, Tarnow, Jaroslaw, Lemberg and Brody, well connected by rail, and backed up by the central position of the large entrenched camp of Przemyśl. If Russia succeeded in breaking through this line, she would still have the ridge of the Carpathians in front of her, with only four different points of crossing, viz. : Karosmez, where the railway joins the headwaters of the Theiss and Pruth; Volez, railway crossing; Sano; and the Poprad defile. It is not likely that Russia would split up her forces to negotiate any of these difficult crossings. She could turn the Austrian first line of defence, the chain mentioned above, by coming in from the east, and moving up the Valley of the Dniester. But here she would still have the Carpathians to cross. So her best line of advance would seem to be, having concentrated her army in the south-west of Poland, to avoid the Carpathians, and move into Moravia. By this line she would have to deal with the strong places of Cracow, Troppau and Olmutz, and her lines of communication would be in danger. But she would be on the high road to Vienna, and much nearer to it than if she had successfully crossed the Carpathians more to the east. The Austrians would much sooner stop the Russian advance on their capital than attempt to cut the Russian lines of communication. So that, weighing the advantages and disadvantages, this would seem to be Russia's best line of advance.

In addition to the defences of Austria, artificial and natural, already mentioned, her next best line of defence would certainly be that of the river March, from Olmutz down to Pressburg.

Roumania's best line of defence would be the Pruth, which the Russians would find very difficult to turn owing to the flank position of Czernowitz. If Russia succeeds in forcing the passage of the Pruth,

Roumania has still a very strong line of defence on the Sereth, at Nemolassa and the defences from Focsani to Odobesti.

The Russians, in case of defeat, would hold the line Warsaw, Ivangorod, Beridchef and Bender; with the line of the Dnieper, Minsk, Kieff and Nikolaief, as base. (Read pp. 152-159.)

Question 4.—We shall first discuss the strategic advantages gained by Germany. She would be in a good and strong position, to start with; her right resting on Antwerp, and her left on the Rhine about Wesel or Cologne. France would find it extremely difficult to turn this position; and Germany would have nothing to fear from Holland or Belgium. From the Antwerp-Wesel-Cologne line as base, Germany could pour large bodies of her troops by the numerous railways which lead into north-east France; and, since there is no natural line of defence for France in this direction, Germany might be able to land on French soil without suffering heavy losses. The first French line of defence would be the fortresses, Dunkirk, Lille, Valenciennes and Mézières. Behind these there is the line Boulogne, Peronne, Amiens, Reims and Chalons, to bar the German advance on Paris. While Germany is moving down towards Paris her left flank would be protected by the line of the Moselle, and the strong places on it, Coblenz, Thionville (or Diedenhofen) and Metz.

By moving into Switzerland with such a powerful army, France has completely turned the German lines of defence (*a*) Thionville, Metz, Strasburg, and (*b*) Coblenz, Mannheim, Strasburg, Brisach. We may take it that France would have no difficulty in crossing the Rhine between Basel and Schaffhausen. If she crossed at Schaffhausen she would have completely turned the line of the Black Forest; and the French force could also get on to the north bank of the Danube, thus avoiding the line Ulm, Ingolstadt, Ratisbon. Here the German line of defence would be Ulm, Stuttgart, Carlsruhe, *i.e.* from the line of the Danube to the Rhine. (Read pp. 123-127.)

Question 5.—All the trade of Great Britain with the cities and countries on the west coast of South America, from Valparaiso up to Panama, has now to go round by Cape Horn. Thus, from Liverpool to Valparaiso is 9,000 miles and the voyage takes 38 days. From Liverpool to Callao, in Peru, is 10,000 miles, and takes 41 days. When the canal is open, the distance to Callao will be 7,000 miles, and to Valparaiso under 8,000. A similar change will take place in the voyages to the Pacific shores of Mexico and the United States.

From Liverpool to the eastern end of the canal will be 4,500 miles; from the western end of the canal, across to Singapore and the Straits Settlements, is almost a straight line, is about 10,000 miles. This will bring Singapore nearer and more direct than if the journey had to be made round the Cape of Good Hope; and the positions of Jamaica and Labuan would increase in strategical importance. AUCKLAND, in New Zealand, will be nearer to Southampton, and the voyage will be shorter than the present route by nearly 2,000 miles.

Question 6.—See notes at the heading of these papers, and answers to Question 3, Paper I.

Question 7.—A body of troops, from Calcutta or Madras, would be landed at Rangoon, and proceed by rail, from Rangoon to Myitkina terminus, on the west of the Yunnan. To relieve the pressure on the railway, the second column would go up the Irawaddi by boat from Mandalay to Bhamo. The third column would go by rail from Rangoon to Mandalay, and branch off here to Kunlong Ferry, on the Salwin. In this way, the three columns would arrive on the Yunnan frontier.

From Peshawar to Calcutta takes 4 days: from Calcutta to Rangoon, 680 miles, say 4 days. From Rangoon to the Yunnan frontier, about 500 miles, or 30 hours, taking into account the speed of troop-trains. So that 10 days ought to be sufficient for the Peshawar troops to get to the Yunnan frontier.

Question 8.—See answer to Question 11, Paper I., and Question 9, Paper V. (Make a careful study of this railway and its branches.)

Question 9.—A good source of coal would be the Chinese coal-fields, in Mongolia and Manchuria. Just at present they are badly worked, so that much is not heard of them; but with the opening up of China by railways, they will prove to be rich and profitable. Japan exports large quantities of good coal; and if she is still our ally, we could get coal from her. We could also get good coal in North Borneo. But by far our best sources would be Queensland, New South Wales and Canada. The value of coal exported from New South Wales last year (1907) was nearly a million sterling; and Canada increases its output of coal yearly. The extent of the coal-fields in Canada and British Columbia is about 65,000 square miles, much larger than the area of England and Wales.

The most convenient coaling stations would be Albany, Singapore, Thursday Island and Labuan.

IV

1. Placing Bulawayo at the top of a sheet of paper and the port of East London, almost directly below it, at the bottom, and joining these two places by a straight line; give, in order, from north to south, all the important places through, or close to which, the line passes. How would you locate Delagoa Bay and Durban with regard to this line? And if a man had to go, by rail, from the largest town on this line to Cape Town, what important stations would he pass through on the way? How many miles is it by sea from Durban to Delagoa Bay?

2. What are the boundaries between:

- (a) The Orange River Colony and Transvaal;
- (b) The Orange River Colony and Basutoland;
- (c) Transvaal and Portuguese East Africa;
- (d) Transvaal and Bechuanaland Protectorate;
- (e) Griqualand East and Natal;
- (f) Cape Colony and Namaqualand. Place Port Nolloth, Vryheid, Mafeking, Komati Poort, Amajuba Hill and Aliwal North.

3. What are the political divisions of Australia, and how are they situated? Mention three important towns in each. What is the most important range of mountains, and the largest river in the continent? Name five harbours in their order of importance.

4. Draw a sketch-map of the Red Sea, showing the positions of Jidda, Kamaran Island, Obok, Raheita, Massaua, Port Soudan and Kosseir. What are the cables which go through the Red Sea? Where do they directly lead to, and where do they touch land?

5. What are the boundaries between Chinese Turkestan and the (Russian) Government of Turkestan? Between the Yarkand District and Kaskmir? What are the passes which would be used by Russian forces moving into Chinese Turkestan? What is the easiest route from Russian Turkestan into China, and the first important place on the route?

6. Give an account of the principal railways which cross the United States, from the Atlantic to the Pacific. Which of them, and what particular section of it, would be most convenient for an invasion of Canada? Through what important places, and over what natural features do they pass? What are their termini?

7. What is meant by a BUFFER STATE? Give examples. What, and to whom, are its advantages and disadvantages?

8. If you had to lay down three large railways in Persia, to promote British commerce, where would you make them? (One of them, at least, is to be strategical as well as commercial.) What would be the best way to link up any or all of them with the Indian railway system?

9. Give an account of the British cables across the Atlantic Ocean.

ANSWERS

Question 1.—Maaklutsi, Pretoria, Johannesburg, Vereeniging, Heilbron, Bethlehem, Barkly East.

From about the middle of the line draw a straight line to the east; it will pass through Delagoa Bay. Mark a point on the line, one-fourth of the way from East London to Bulawayo, and from this point draw a line to the east; it gives Durban, three-fourths of the distance the point is from East London.

Johannesburg, Kroonstad, Bloemfontein, Nauwport (junction), De Aar (junction), Beaufort West, Worcester, Paarl. 300 miles. (Read p. 79.)

Question 2.—(a) The Vaal and Klip rivers. (b) Caledon River. (c) The Lebombo Mountains, and their continuation, called the Longwe Range. (d) The Limpopo and Marico rivers. (e) The Umzimkulu River. (f) Orange River.

On the west coast; south of the mouth of the Orange River: rail to Springbok.

North of Natal, west of Zululand; north-east of Ladysmith.

West of Pretoria, just over the Transvaal frontier.

On the eastern Transvaal frontier, where the railway from Delagoa Bay to Pretoria enters the Transvaal.

At the north-western point of Natal, near the Transvaal frontier. Southern frontier of Orange River Colony, on the Orange.

Question 3.—At the extreme south-east, Victoria; principal towns, Melbourne, Ballarat, Geelong. North of this, on the east coast, New South Wales; Sydney, Paramatta, Bathurst. Next on the north is Queensland; Brisbane, Rockhampton, Port Denison. Northern Territory; capital Port Darwin. West Australia; Perth, Fremantle, Albany. South Australia; Adelaide, Port Augusta, Kapunda.

Australian Alps, Grampians, Pyrenees.

The Murray-Darling River, nearly 3,000 miles long.

Sydney, Melbourne, Adelaide, Brisbane, Albany. (Read p. 60.)

Question 4.—Draw a line, in pencil, 5 inches long, from north-west to south-east. Place Suez at the upper end, and Perim Island at the lower. Opposite the middle of this line, on the east, you get Jidda, $\frac{1}{2}$ inch from the line. One-fifth of the line up from Perim, and $\frac{1}{4}$ inch west, gives Massowah. Kamaran Island nearly opposite. Kosseir is opposite a point one-fifth of the way down from Suez. Port Sudan is just above Suakin, and Obok is just outside Perim, in French territory. Raheita is in Italian territory, opposite Perim.

Three cables go down the Red Sea from Suez; two touching at Suakin and Massowah, and one going direct to Aden. And one goes across from Suakin to Jidda.

Question 5.—The answers to this question may be got direct from my map of Trans-Caspia.

The easiest route would be by the Valley of the Illi, south of Lake Balkash; first place of importance, Kuldja.

Question 6.—The Northern Pacific Railway commences at Duluth, western extremity of Lake Superior; runs through Bismarck (crosses the Missouri here by a bridge over 1,000 yards long); at Helena, reaches the foot of the Rocky Mountains. It crosses these mountains at Guaro, 4,000 feet high; through the Belt Range, the valleys of the Clark and Columbia rivers, and reaches the Pacific Coast at Tacoma. An important branch from this line runs up the Red River Valley to join the Canadian Pacific Railway at Winnipeg; and another branch from Helena connects it with the Union Pacific Railway. This line runs across the United States, from Chicago to San Francisco. (From New York to Chicago there are two main lines: (a) By Cleveland and Toledo; (b) By Philadelphia and Pittsburg.) From Chicago to Omaha; thence by the River Platte Valley to Cheyenne; crosses Evans Pass, at an elevation of 8,200 feet. Then it crosses the Rocky Mountains at Sherman, the highest railway station in the world. Crosses the Wahsatch Mountains at Aspan, runs along the eastern shore of the Great Salt Lake; crosses the Humboldt Range and the Sierra Nevada, and meets the Pacific Coast at San Francisco.

A branch from this line, from Cheyenne, runs through Denver, to the Mexican frontier at Franklin.

The Southern Pacific Railway runs from New Orleans along the coast to Houston. (From here a branch line goes to Galveston, and, over the Eagle Pass, to Mexico.) At Benson, a branch runs to the shores of the Pacific at Guaymas. It crosses the Rio Colorado at Yuma, and joins the West Coast Railway at Colton. From here two lines run : one to San Diego, the other through Los Angeles to Long Beach ; both on the Pacific Coast.

Question 7.—A Buffer State is one which is geographically situated between two other States ; but politically independent of both. Switzerland, Roumania, Afghanistan. Its importance depends on the risk of its neutrality being violated either by its own government or by a victorious neighbour. Its advantages are (*a*) to the weaker of the two neighbouring States as protection from the stronger ; (*b*) to the stronger, if the weaker is to be attacked. Its disadvantage is that if the power of the two neighbouring States be evenly balanced, the Buffer State can wring terms from either by threatening to throw its weight on the side of the other. And if one of the neighbouring States be much weaker than the other it is altogether at the mercy of the Buffer State.

Question 8.—The first line I should lay down from Nushki to Nasirabad (Seistan), and continue it on to Kerman and Bunder Abbas. This line would follow the existing trade-route, and connect Quetta, by rail, with the narrowest part of the Persian Gulf.

The second line I should make from Kerman to Ispahan, and on through Kum to the capital Teheran. A branch line from Ispahan would run down to Bushire, the principal seaport on the Gulf. These lines would also follow existing trade-routes.

The third line would run along the coast from Bushire to Mohammerah, cross the Karun River here, go north to Kuramabad, Kermanshah, Hamadan and Teheran.

A branch of the Quetta-Kerman line would run up to Meshed, that is, if an arrangement could be come to with the Persian Government, whereby the terminus at Meshed might be strongly fortified and held by a large detachment of British-Indian troops.

For the third line, the route Mohammerah-Burujird-Teheran has been suggested by some high authorities on Persia ; but Kermanshah cannot be left out.

(NOTE.—JULFA, on the river Aras, is the terminus of the Russian railway from Tiflis through Erivan.)

Question 9.—There are eleven British cables across the Atlantic to North America. They start from Valentia Island, off the west coast of Co. Kerry (Ireland), and end at Trinity Bay, in Newfoundland ; or at Halifax, in Nova Scotia. There is a British cable from Halifax to the Bermudas, Turk Island, Jamaica, and on to Georgetown, in British Guiana. There are three British cables to South America, all ending at Pernambuco, in Brazil. One goes from Land's End, and two from Lisbon.

V

1. Name, and give the relative positions of the six largest islands in the West Indies which belong to Great Britain. What are the nearest British possessions on the American mainland to the two largest of them? What cables connect them with other parts of the British Empire, and with North and South America?

2. Draw a sketch-map to show the boundaries of Russia in Asia, from the Caspian Sea eastwards to the defile of the river Ili. Show the important places on each side of this boundary, or name them, within a distance of 200 miles each way, and mark the general natural features of the country passed over.

3. Where are the following places, and how are they remarkable :
St. Margaret's Bay, Miquelon, Berehaven, Cocos Island, Langres, Elvas, Pola, Stade, Rastadt, Przemysl, Bender and Bomarsund?

4. What places form what is called the "Quadrilateral," in Bulgaria, in North Italy, in East Prussia? And the "Pentagon" in the east of France? Point out their strategic advantages.

5. If there were no British troops in Egypt, and Cyprus were made the base of military operations on the Levant coast, what time would it take to send to this base troops from Bombay, Gibraltar and Plymouth? And how long would it take troops to go from Cyprus to the nearest point of the Syrian coast, and to Alexandria?

6. Name the rivers of the Punjab, from west to east, giving the principal towns on each, how they are situated, and say how they are connected with other large towns in India by rail. And give the position of the following battlefields :—

Chilianwala, Aliwal, Moodkee, Rammuggur and Ferozeshah.

7. Draw a sketch-map to show the principal Alpine ranges, and mark the position of the following passes :—

St. Gothard, Stelvio, Simplon, Great St. Bernard, Mount Cenis, Splugen and Col de Tende.

8. Give the names of the British Naval Dockyards abroad; where they are situated, and how many miles (in round numbers) each is from Devonport.

9. Describe the course of the St. Lawrence, the Red River, and the Saskatchewan, mentioning the towns on them, their commercial or strategical value, and where they are crossed by railways and important main roads.

10. Taking the Pamir Plateau as a centre, draw lines from it to show the directions of the following mountain ranges: Thian Shan, Karakorum, Kuenlun, Himalayas, Hindu Kush; and mark the principal passes across each range.

ANSWERS

Question 1.—Jamaica, south of Cuba; between 75° and 80° W., and 15° and 20° N. Trinidad, just off the South American coast,

10° N. Tobago, just north of Trinidad. Barbadoes, north-east of Tobago. St. Lucia, with Castries Bay, north-west of Barbadoes. St. Vincent, south of St. Lucia. All, except Jamaica, in the Windward Islands, and from 50 to 200 miles from the nearest part of South America. Jamaica, 600 miles from British Honduras; Trinidad, near the mouth of the Orinoco, 200 miles from the nearest point of British Guiana. Cables from Jamaica, by Puerto Rico, connecting all the Lesser Antilles, passing on to Trinidad and British Guiana. Cable from Jamaica, by Turk Island (Bahamas) and Bermuda, to Halifax. Also from Jamaica to Santiago (Cuba) and to Colon on the isthmus of Panama. (Read pp. 99-103.)

Question 2.—See *my map* of Trans-Caspia and Central Asia.

Question 3.—Firth of Forth; naval base and docks. Small island south of Newfoundland, belonging to France. Cable station, Bantry Bay, south-west coast of Ireland. Naval base, south-west of Java. "All Red" cable lands there, from Perth, then on to Rodriguez Island and the Mauritius. France east, one of the forts of the Pentagon, near the source of the Meuse. Fortress in East Portugal, opposite Badajos. Austrian naval station, south of the peninsula D'Istria, in the Adriatic. German fortress, left bank of the mouth of the Elbe, commanding the approach by sea up to Hamburg. Baden, south-west of Carlsruhe. Entrenched camp on the San, in Galicia. Commands passage of Dniester. Russian fortress on Aland Island, in the Baltic.

Question 4.—Rustchuk, Silistria, Varna, Shumla. Flanks any advance from the Danube about Nicopolis to the Balkans. Bars the way from the Dobrudscha into Turkey. Commands stretch of the Danube between Rustchuk and Silistria. Joined to Black Sea coast by rail to Varna. Shumla commands the passage of the Balkans.

Pescheira, Verona, Legnago, Mantua. Flanks any advance from Switzerland. Fronts an advance from the Tyrol, or north-east frontier.

Konigsberg, Danzig, Thorn and Posen. Flanks an advance from Poland on Berlin. Fronts an advance from Russia into East Prussia. It holds a very strong position on the lower Vistula.

Langres, Epinal, Dijon, Besançon and Belfort. Flanks an advance from the middle Rhine, or from Metz, on Paris. Fronts any advance southwards.

Question 5.—Plymouth to Gibraltar, 1,050 miles; Gibraltar to Malta, 980 miles; Malta to Cyprus, 930 miles. Roughly 3,000 miles. Putting down 300 miles per day, the journey would take 10 days; or, with a margin, 11 days. Gibraltar to Cyprus, 6 or 7 days. Bombay to Aden, 1,660 miles, Aden to Suez, 1,400 miles, Suez to Port Said, 90 miles, Port Said to Cyprus, 240 miles. Say 12 days for 3,400 miles. It is 115 miles from Larnaka to Beyrout, the nearest large port on the Syrian coast, and 260 miles to Alexandria.

Question 6.—Kabul River, Nowshera. Indus; Attock, D. I. Khan, D. G. Khan, Sukkur, Karachi; Jhelum; Srinagar, Jhelum. Chenab;

Wazirabad, and (near) Multan, Ravee ; Lahore. Beas ; Jullundur. Sutlej ; Ludhiana, Ferozepore, Bahawalpore. The N.W. Railway and its branches connects all these towns, and joins on to the other Indian railways at Saharanpur, Umballa and Rukh junction. On the Jhelum ; on the Sutlej ; on the Sutlej ; south-east of Ferozepore on the Sutlej.

Question 7.—Take this out of any ordinary atlas. The position of the passes is in the following order, from east to west : Stelvio, Splugen, St. Gothard, Simplon, St. Bernard, Cenis, Col di Tende.

Question 8.—American waters : Halifax, lately given up ; Bermuda, 3,000 ; Jamaica, 3,800 ; St. Lucia, 3,700. In the Pacific waters, Esquimault has been given up. Far East ; Hong Kong, 9,500. Singapore, 8,000 ; Colombo, 6,500 ; Bombay, 6,100. Africa, Cape Town, 5,500 ; Mauritius, 6,400. Mediterranean, Gibraltar, 1,050 ; Malta, 2,000.

Question 9.—The course of the rivers may be found on any map of Canada.

The great importance of the St. Lawrence is as a waterway ; and by means of canals it is connected with all the five great lakes. With the lakes it would form a strong defensive line against any attack from the direction of the Eastern American States. The Saskatchewan is the great waterway between the base of the Rocky Mountains and the important province of Manitoba. The Red River gives an easy line of approach between the State of Minnesota and Manitoba. And the possession of Manitoba by a hostile force would completely turn the line of the St. Lawrence and the lakes, in addition to holding the Canadian Pacific Railway.

Question 10.—Thian Shan bend to the north-east in a long curve. Kuen Lun bend east, above the plateau of Tibet. Karakorum, south-east, and Himalaya, south-east by south, Hindu Kush and Safed Koh, west. For passes, see *my map* of Central Asia.

VI

1. Draw a sketch-map of the basin of the Upper Nile, from Shendy to the Ripon Falls, marking the position of Gondokoro, Senaar, El Obeid, Wadelai, Khartoum and Sobat.

2. Before the railways were built, what were the five great commercial routes of Central Asia ? Which of them are still used ? And which of them have been influenced, as to their use, or disuse, by the introduction of railways ?

3. Give four of the most important Turkish cities in Armenia, near the Russian and Persian frontiers. In case Turkish troops had to be sent to these places from Scutari, as quickly as possible, what would be the best way to send them, and how long would it take ?

4. What is the longest railway in the world (all, from end to end, belonging to one government) ? Give a description of it, the towns it passes through, and the rivers it crosses.

5. Mention the principal coast defences of Germany, from the frontiers of Holland to the town of Nimmersatt. And what are the principal strategical advantages which Germany gained by the construction of the Kiel canal?

6. What are the principal ports of Persia, and how are they situated? By what lines is telegraphic communication carried on in Persia, and how is the Persian telegraph system linked up with Europe and India?

7. In going from Plymouth, round by the Cape of Good Hope to Colombo, what are the coaling stations? What are the coaling stations belonging to any foreign country which may be used by Great Britain?

8. Draw a sketch-map of Afghanistan, marking the position of Kabul, Herat, Balkh, Ghazni, Chaman, Kandahar, Jellalabad and Farah.

9. How would troops get to a concentration at Cawnpore from the following places:—

Ahmedabad, Bangalorc, Poona, Umballa, Mooltan and Darjeeling? Give the names of the railways employed, and the principal towns passed through.

ANSWERS

Question 1.—The Ripon Falls are just where the Nile leaves Lake Victoria Nyanza, near the small settlement called Jinja. Wadelai is to the north of Lake Albert Nyanza. Gondokoro, just on 5° N. The Sobat comes in from the east, south of Fashoda, 10° N. Senaar is south-east of Khartoum, on the Blue Nile. Shendi is north of Khartoum opposite Abu Klea. El Obeid is the capital of Kordofan.

Question 2.—(1) The greatest and most important was what was called the "Trakht," which led from Tiumen, in the Obi Valley, all the way to Pekin. Tiumen is connected by rail with Ekaterinburg; this branch line is connected with the main Siberian line at a place called Cheliabinsk. From Tiumen a weekly caravan used to start and go through Omsk, the chief centre of the Irtysh trade; Tomsk, the centre of the Obi trade and that of the Barnaul mining district; Krasnoyarsk, the depot for the trade of the Upper Yenesei; Irkutsk 1,856 miles from Tiumen, the centre of four caravan routes. Then to Kiahkta on the Chinese border; Maimatchin, the first Mongolian town, and across to Pekin. From Irkutsk to Yakutsk on the Lena; and another to Vladivostock, with a branch (from Khabarovsk) to Nikolaevsk. The trade of this route is now taken up by the great Siberian Railway.

(2) The next great water and caravan route is from Orenburg down to the north of the Sea of Aral. Then by the Syr-Daria, which the new Orenburg-Tashkent Railway follows, down to Khokand, Kashgar and Yarkand. Then along by the Yarkand and Tarim rivers, and over the eastern end of the Kuen Lun Mountains, and by the Hoang Ho, to Pekin.

(3) Kabul, Herat, Meshed, Teheran, Tabriz, Erzeroum, Trebizond.

(4) Orenburg, Khiva, Merv, Herat, Quetta, Sibi, Shikarpur, Karachi.

(5) Balkh, Kabul, Kandahar, Yezd, Ispahan, Baghdad, Damascus, Beyrout.

Question 3.—Erzeroum, Bayazid, Van, Bitlis.

By steamer to Trebizond, 500 miles, 2 days; from Trebizond to Erzeroum, by road, 120 miles, 6 days; that is, 8 days altogether.

Question 4.—The Trans-Siberian railway runs from Ufa, in Europe, the former terminus of the great trunk lines from St. Petersburg and Moscow; through Slatoust, Cheliabinsk, Kurgan, Omsk, Tomsk, Krasnoyarsk, Irkutsk, round by the south of Lake Baikal, Chita, Stretinsk, Tsitsihar, Harbin, Ninguta, Vladivostock. From Petrograd to Vladivostock is 4,300 miles. From Stretinsk on the Shilka there is regular steamboat communication with Khabarovsk on the Amour; and from here a railway runs to Vladivostock.

The railway crosses the Urals, the rivers Tobol, Irtish, Obi, Yenisei, Chilka and Amour. From Harbin a line runs down to Dalny and Port Arthur. (Read pp. 162, 163.)

Question 5.—Emden, Wilhelmshafen, Bremerhafen, Cuxhafen, Stade, Kiel, Wismar, Rostock, Stralsund, Swinemunde, Kolberg, Rugenwalde, Rixhoft, Hela, Pillau, Memel.

Her Baltic fleet and North Sea fleet could act concentrated or separately. Owing to the difficulty of landing on the German coast, and Germany's coast defences, the German fleet could be used altogether for offensive purposes.

Question 6.—See pp. 180-184, and map of Persia.

Question 7.—Gibraltar, Freetown, St. Helena, Cape Town, and Pt. Louis in the Mauritius.

We are permitted by Portugal, in case of necessity, to coal at Lisbon, Madeira, and St. Vincent in the Cape Verde Islands.

Question 8.—This can be done by the help of any ordinary map of Afghanistan, and with my sketch-map of distances for the Middle East.

NOTE.—Farah and Ghirishk are the two principal places on the route from Herat to Kandahar. (Read pp. 189-192.)

Question 9.—Any railway map of India will supply the answer to this. The student would also do well to study carefully the railways all along the western frontier, from Karachi up to Jamrood and Dargai; with their branches and important junctions, such as Campbellpore, Rukh, Golra, etc. (Read pp. 48, 49.)

VII

1. Draw a sketch-map of Caucasia, showing the railways, principal roads, and principal rivers; and mark the following places: Batoum, Poti, Tiflis, Kars, Stavropol, Derbend, Alexandropol, Taman Peninsula, Piatigorsk, Mozdok, Nakichevan, Erivan and Sukhum Kale.

2. During the past century the British Army has fought battles

at the following places : Orthes, Assaye, Inkerman, Aliwal, Quatre Bras, Ahmed Kehl, Bergen-op-Zoom, Meeanee, Dhalimcote, Tel-el-kibir and New Orleans. Where are these places, and when did the battles take place ?

3. Draw a sketch-map of the Kingdom of Norway, showing the following places : Dromen, Stavanger, Bergen, Trondhjem, Tromso, Hammerfest, Arendal and Molde. Which of these ports is nearest to Russian territory, and how far away is it from the Russian boundary ? Where are the two fortified positions of Halmstad and Landskrona ?

4. What is the size of Manchuria as compared with that of any European country ? How is it divided ? What are the branches of the Amur which flow through Manchuria, and the principal town on each ? Describe two other large rivers in Manchuria which played important parts in the Russo-Japanese War, and give the position of five battlefields.

5. Give the boundaries of the Congo Free State, and the principal trading centres in that State. To what European countries do the different lands round the State belong, and what is the principal town in each section ?

6. Give clearly by sketch or otherwise, the boundaries between British India and Tibet, and between British India and Nepal. Trace the course of the recent expedition to Tibet.

7. Mention, in order, the counties of England which border on the North Sea, giving the principal ports in each. How far is it from :—

(a) Newcastle to Copenhagen,

(b) Hull to Hamburg,

(c) Harwich to Rotterdam,

(d) London to Antwerp,

(e) Dover to Ostend ? What place in England is most distant from the sea, and how far away is it ?

8. Name the political divisions of British South Africa. Give the capital of each, and say how it is situated, and connected (if at all) with Port Elizabeth.

9. Give a description of Nigeria and the Niger Protectorates ; and where are : Say, Gando, Bida, Lakoja, Busang, Brass, Kano, Wumo, Kuka, Yola and Akassa ?

ANSWERS

Question 1.—This map can be copied from any good atlas ; the railway from Tiflis should be marked running down to Kars (just on the Turkish frontier), and the branch from Kars to Julfa, just on the Persian frontier. All the places mentioned in the question may be found in any good map.

Question 2.—South of France, on the Gave de Pau, a branch of the Adour, 1814. In the district of Arungabad, north-west of the Dekkan, 1803. Crimea, 1854. Punjab, on the Sutlej, 1849. Belgium, 1815. Afghanistan, on the way from Kandahar to Kabul,

1880. Holland, north of Antwerp, 1799. Scinde, 1843. Bhutan, 1864. Egypt, 1882. United States, mouth of Mississippi River, 1812.

Question 3.—South-west of Christiania; south-west corner of Norway; on the coast, west of Christiania, and just above the parallel of 60° N.; north of Christiania, on the coast, connected with the capital by rail; the port of the narrowest part of Norway, and nearest to Russian territory (now Finland); just below Tromsø, Finnish territory stretches to within 20 miles of the Atlantic coast of Norway; the most northern town in the world; on the south; north-east of Christiansund, cable from Newbiggin lands here; on the coast, south of Christiansund. These are on the south-west coast of Sweden, commanding the way from the Kattegat to the Baltic.

Question 4.—Twice as large as France. Three provinces: Tsitsihar in the north, Kirin in the middle, Mukden in the south.

The Sungari, on which is Kirin; the Usuri, on which is Muravieff-Amurski; and the Nonni is a branch of the Sungari; on it is Tsitsihar. The Yalu, forming the Korean boundary on the west, joined by the Ai River above Wiju. The Liao-ho first divides China proper from Mongolia; crosses the Manchurian frontier 100 miles north of Mukden, then south to Te-ling, and south-west to the Gulf of Liao-tang, below Niew-chang. It is navigable up to Te-ling. Its chief tributaries are the Hun-ho and the Taitse-ho; and the Sha-ho is a branch of the Taitse.

Liao-Yang, 40 miles south of Mukden.

Nanshan, or Kinchau, 35 miles north of Port Arthur.

Telissu, 84 miles north of Port Arthur.

Tashi-chao, 145 miles north of Port Arthur. All these four places are on, or near, the railway; and Liao-Yang is 210 miles from Port Arthur.

Question 5.—From the mouth of the Congo, 6° S., to Matadi. (From here there is a railway to Leopoldville, 235 miles, to connect the navigation of the Upper Congo with the sea.) From Matadi the boundary runs direct east for 240 miles to Sakalla, where it runs south, along the eastern bank of the Lukualli River to 9° N., when it runs east till it meets the twenty-second meridian. Then it bends to the parallel of 12° S., whence it runs east to Katanga. (A railway is being built from Benguela to Katanga, which will be 1,000 miles long; and which, when completed, will bring Pretoria 6 days nearer to London and save 3,000 miles.) From Katanga the boundary runs along the river Luapula (which separates the Congo from British Central Africa), then by Lake Tanganyika, Albert Edward Nyanza, and Albert Nyanza to the west of the Nile at Wadelai. From here it runs north-west to the twenty-fifth meridian, and then it follows the Ubangui River to the Congo, north of Leopoldville. To the north is French Congo, capital St. Paul de Loanda; east, what was German East Africa, capital Dar-es-Salaam.

Question 6.—From Darjeeling, about 89° E., the route of the expedition was first north-east to Jalap La, on the frontier of Sikkim and Tibet. Then to Yatung, the first Tibetan town in the Chumbi

Valley. From hence northwards to Phari Jong and on to Tuna. This place is just east of that part of Sikkim which borders on the south of Tibet, called Giaogong. From Tuna the expedition moved on to Guru, where an action was fought with the Tibetans, on March 30, 1905. To the north-west of Guru is Khamla Jong. On April 11 the Expedition arrived at Gyantze, north of Guru and south of the Tsang-po or Brahmaputra. Then they turned to the north-east, crossed the Tsang-po to the north of Yarndok Tso, and arrived in Lhasa on August 3.

The boundaries asked in the question can be easily followed out on any ordinary map of the northern part of India.

Question 7.—Northumberland; Newcastle. Durham; Sunderland. York; Hull. Lincoln; Grimsby. Norfolk; Yarmouth. Suffolk; Ipswich. Essex; Harwich. Kent; Dover.

(a) 680 miles; (b) 430 miles; (c) 110 miles; (d) 200 miles; (e) 67 miles. Rugby, 62 miles.

Question 8.—Cape Colony; Cape Town; railway by De Aar, Nauwport, Middelburg. Orange River Colony; Bloemfontein; railway, Norval's Point, and Middelburg. Transvaal; Pretoria; railway, Kroonstad. Bloemfontein, etc. Natal; Durban; 400 miles, by sea, to Port Elizabeth. Bechuanaland; Vryburg, on Cape Town Railway. (See p. 79.)

Question 9.—Going up the Niger, from its mouth, we pass the following places, in order: Brass and Akassa, Lakoja, Bida, Busang, Say. Wurno is in the north-west of Nigeria; Kuka just by Lake Tchad; Gando south-west of Wurno; Yola in the east, on the Benwe River; Kano in the north, east of Gando.

Nigeria comprises an area of 340,000 square miles, more than twice the size of France. Its population is not less than 16,000,000. It is bounded on the north by a line running generally along the fourteenth parallel of north latitude, until it comes to 40 miles east of Kuka, whence it turns south to the shores of Lake Tchad. Then the boundary runs south-west till it meets the Gulf of Guinea on the fifth parallel of north latitude at Old Calabar. The western boundary runs along the meridian of 3° E., up through Dahomey and Borgu. The centres of administration are Lokoja and Jebba, on the Niger.

The country has a fertile soil; lead, silver and tin have been found. The Niger is regularly navigated by a fleet of 30 steamers, to about 1,000 miles from the sea. The principal exports are rubber, ivory and palm oil. (Further information about Nigeria and its railway centres, Kano, will be found in the paragraphs dealing with the British possessions in Africa, and on p. 88.)

VIII

1. Give an account of the different possessions which are called the "Straits Settlements." In what does their commercial importance consist, and with what countries is their principal trade? What would be the advantage of a canal across the Isthmus of Kraa?

2. What are the coast defences of the west of Holland, from the entrance to the Zuyder Zee to the mouth of the West Scheldt? And what forts in particular defend the approach to Rotterdam, Dordrecht and Antwerp?

3. What are the principal manufactures of Germany, and the manufacturing centres? Where are the four principal German coalfields, and what are their disadvantages? Where is iron chiefly found in Germany? Where is the iron ore got for the Krupp works?

4. Trace the journey of a river barge which goes, by river and canal, from :—

- (a) Rotterdam to Marseilles, and
- (b) From Havre to Galatz.

5. Draw a sketch-map of the territory (Alsace-Lorraine) which was taken from France by Germany in 1871. Give its area and population. And give accurately the position of the following fortresses: Colmar, Metz and Thionville.

6. Point out the commercial and strategical advantages of:

- (a) The railway from Salonika to Belgrade,
- (b) The St. Gothard Tunnel,
- (c) The Arlberg Tunnel,
- (d) The Vienna-Cracow Railway, and
- (e) The Bourdeaux-Cette Ship Canal.

7. Trace the courses of the Amu Darya, the Syr Darya, and the Helmund, giving all the important places on or near their banks, and pointing out their strategical importance as waterways.

8. Draw a sketch-map of Abyssinia, marking its principal towns, rivers and trade routes.

9. Describe the five great lakes of Canada in the St. Lawrence basin; and give the position of Duluth, Sault St. Marie, Sudbury, Toronto, Milwaukee, Detroit, Sarnia, Buffalo and Ottawa.

ANSWERS

Question 1.—The “Straits Settlements” is the name applied to a Crown Colony in the Malay Peninsula; the name being derived from the Straits of Malacca, on the great trade route between India and China. The area is about 1,600 square miles, and population 600,000, mainly Chinese and Malays. The capital of the colony and the seat of government is Singapore. The strength of the Imperial garrison is about 2,400.

The colony is divided into the following parts :—

Singapore, an island at the southern extremity of the Malay Peninsula, 206 square miles, and with a population of 230,000. It has a fortified harbour and is the great commercial centre for the east.

Penang, or Prince of Wales Island, 360 miles north of Singapore, and 2 miles off the coast of Wellesley Province. The capital and port is Georgetown, or Penang.

Wellesley Province stretches for 45 miles along the coast, with

an area of 288 square miles and population of 100,000. The Dindings are 80 miles south of Penang, with an area of about 260 square miles. Capital is Lumut, with a very fine harbour.

Malacca is a town and territory 240 miles south of Penang. The territory extends about 40 miles along the coast. Rocky and barren. The Cocos, or Keeling Islands, 700 miles, and Christmas Island, 200 miles south-west of Java, were annexed to Singapore in 1900.

In the end of 1906, the Island of Labuan was placed under the government of the Straits Settlements. Its population is 8,000 and its capital Victoria.

Singapore is the greatest trading centre in the Far East, about half-way between Calcutta and Canton, being 1,600 miles from Colombo, 1,500 from Hong Kong, 2,000 from Port Darwin in North Australia, and 5,000 from Natal.

Great quantities of the best tin are produced in the Peninsula; the other exports being rubber, rice, sugar, tapioca and pepper. Coal is found in Labuan.

The principal trade of the Settlements is with the Dutch East Indies (£9,000,000), Great Britain (£9,000,000), British India (£4,500,000), Hong Kong (£4,500,000), Siam (£3,000,000), and the United States (£1,500,000).

A canal across the Isthmus of Kraa (27 miles broad, and nowhere more than 100 feet high) would save 600 miles in voyages from Calcutta to Canton.

Question 2.—The Helder, Kamp (or Camperdown), Brielle (or the south of the entrance to the Maas), Helvotsluys, Tholen, Bergen-op-Zoom, Goes (on South Beveland), Middelburg, Flushing, Ysendyk, Hulst; and, defending the passage to Antwerp, Liefhenshoek and Fort Lillo. (Read pp. 167, 168.)

Question 3.—Metal goods: Essen (cannon, armour plates and railway plant); Saarlouis, Solingen, Berlin, Magdeburg, Zwickau, Chemnitz, Esslingen, Karlsruhe, Mannheim and Mulhausen.

Machinery: Berlin, Breslau, Essen and Magdeburg.

Woollen goods: Elberfeld, Aachen, Breslau, Zwickau and Stuttgart.

Silks: the Dusseldorf district.

Cottons: Elberfeld, Dusseldorf, Gorlitz, Chemnitz.

Linens: Bielefeld, Zittau, Magdeburg, Linden.

Elberfeld is the Manchester and Leeds of Prussia; Chemnitz, the Birmingham and Manchester of Saxony; Mulhausen, the Manchester of Alsace; Essen, the Birmingham of Prussia, Solingen its Sheffield, and Krefeld its Lyons.

The coalfields are: Ruhr, about Dusseldorf; the Saar, about Saarbruck; the Saxon, near Zwickau, and the Silesian coalfield, near Breslau. They are too far from the sea, and too inconveniently situated to do much in assisting the shipping trade.

Iron is found in the Ruhr, Saar and Silesian districts; and the iron ore for Krupp's works at Essen is brought from Krupp's mines in Spain; port, Bilbao.

Question 4.—Canal from Rotterdam to Maastricht, from here to

the Oise (a tributary of the Seine), from the Seine to the Rhine (by the Marne-Rhine Canal, which goes through the gap of Saverne), from the Seine to the Rhine by the Canal d'Alsace; and so to Marseilles.

From the Seine to the Rhine, by the Marne-Rhine Canal; and on to the Danube by the Ludwig's Canal, which starts from Mannheim, and joins the Danube, after a course of 110 miles.

(This is one of those questions which appear very alarming at first sight, but which contain no difficulty to speak of. If the student, dealing with the question, did not know of the shorter canal route by Maastricht and the Oise, he could have made the barge go by the Rhine up to Strasburg, and then down by the Doubs Canal to the Rhone.)

Question 5.—This can be easily got out of any good map of Western Germany. Area, 5,600 square miles; population, 1,600,000. Metz and Thionville are two strong fortresses on the Moselle. Colmar is on the Ill, half-way between Strasburg and Mulhausen.

Question 6.—(a) Runs up the Valley of the Vardar to Uskub and Ristovatz. From here it crosses the passes of the Albanian Mountains to Nisch, on the Morava, the principal town in Central Serbia, and so on to Belgrade. Being then linked up with the main artery of European railways, that from Paris to Constantinople, Salonika is brought into communication with all the important places in Central Europe. Its principal strategical advantage is that it has a good harbour, which might be easily defended; the Vardar forms one of the lines of least resistance into the interior of the Balkan Peninsula, and the railway leads on to the Valley of the Morava and to the Danube.

(b) This tunnel, $9\frac{1}{2}$ miles long, runs from Goschenen, in Switzerland, to Airolo, in Italy, and the railway goes on down the Valley of the Ticino, to Milan, the capital of Lombardy. Connects directly all the important places in Northern Europe with the large seaport of Genoa, thus considerably affecting the trade of Marseilles. By means of this tunnel heavy goods can be transferred from the Continental ports on the English Channel and the North and Baltic Seas to the Italian ports in 3 days.

(c) This tunnel pierces the Alps at the head of the Inn valley, and has established the easiest means of commercial intercourse between Austria and the border regions of France and the Rhine. It also enables the Swiss to draw their foodstuffs easily and cheaply from the granaries of Hungary.

(d) The railway from Vienna to Cracow, 257 miles long, is the main line connecting the Austrian capital with Russia, Poland and East Russia. It is the most direct way from Vienna to Warsaw, Moscow and Petrograd.

(e) This canal, when completed, will effect a gain of 1,400 miles on the ocean route round the Iberian Peninsula. It will also enable the French Atlantic fleet to act with the Mediterranean fleet, on either coast, in case of war.

Question 7.—The answer to this can be already seen from my map of Central Asia.

Question 8.—The sketch-map may be easily taken from any good map of Africa. Abyssinia stretches from 10° N. to 10° N., and from the meridian of 350° E. nearly to the shores of the Red Sea. Principal towns: Gondar (near the centre), Adowa, capital of Tigre (in the north), Ankober, Addis Ababa, Harar and Koffa. Routes: from Ankober through Harar to Zeila; from Gondar through Adowa to Massowah; from Gondar through Metemneh to the Nile. (See the article on "Abyssinia," in this book, pp. 173-176.)

Question 9.—Lake Superior; area 32,000 square miles, very nearly as large as Ireland; 900 feet deep, and the surface is 600 feet above the level of the sea. The river St. Louis runs into it at Duluth, an important railway terminus. The river St. Mary connects it with Lake Huron, which has an area 23,000 square miles. On its shores are Goderich (a railway terminus on the east) and Saginaw.

Lake Michigan is altogether in the United States, and is connected with Huron by the Strait of Mackinaw. The principal towns on its shores are Milwaukee, Chicago and Michigan City.

Lake Erie is connected with Lake Huron by the rivers Detroit and St. Clair. Its area is 10,000 square miles, and its surface is 560 feet above the level of the sea. It is connected with Lake Ontario by the Niagara River and the Welland Canal. This lake is 7,200 square miles and is only 240 feet above the level of the Atlantic. Between Erie and Ontario are the Falls of Niagara. On the shores of Ontario the principal towns are Toronto, Hamilton, Oswego and Kingston.

Sudbury is a railway junction, north of that inlet of Lake Huron which is called Georgian Bay. Sault St. Marie between Superior and Huron. Buffalo east of Lake Erie. Sarnia opposite Port Huron, south of Lake Huron.

IX

1. A large German invading force lands in Scotland, seizes the line Edinburgh-Glasgow, and pushes down southwards to invade England; what would be the first line of defence for the north of England? What would be the quickest way to send troops there from Aldershot, Portsmouth and Salisbury Plain? What would be the best way to send troops from the south of Ireland to take part in the defence? (Scotland is supposed to be neutral; the English fleet is engaged in the Mediterranean, and cannot be relied upon to protect transports.)

2. A rebellion breaks out against the French in Algeria, the headquarters of the rebellion being Biskra. France, being just then engaged in a war with Germany, cannot afford to send more than a small force of cavalry and artillery from Marseilles. She desires the help of English and Spanish troops, to be sent as quickly as possible. Where would the Marseilles force land, and how long would it take to get there? What would be the quickest way to send the British and Spanish troops, and where would they land? And if the French troops had to be withdrawn from the Morocco frontier, how could they best reach the centre of the rebellion?

3. Give an account of the cables which connect Calcutta, Karachi, Singapore, Hong Kong and Labuan with—

- (a) Australia.
- (b) New Zealand.
- (c) Canada.
- (d) Malta, and
- (e) South Africa.

4. Germany and Russia combine to invade India. All Russian railways are placed at the disposal of Germany. Austria, the Balkan States and Turkey, place their railways at the disposal of the invaders; and the Anatolian Railway has reached Basra. Follow the journey of a German battalion, by train, from Magdeburg to Merv; and the journey of a Russian battalion from Warsaw to Khwaja Saleh. Part of the German army starts from Augsburg, and gets to Basra. Name all the important places it passes through on the way.

5. Describe British East Africa; giving its capital, and the principal trading stations. Where does its most important railway run, what is its length, and what are the strategical and commercial advantages connected with it?

6. Show how far the physical conformation of Switzerland tends to limit the lines of possible attack on her: and discuss the value of the river Aar as a line of defence against a French invasion.

7. Sketch the coast of Canada, from the estuary of the river St. Croix to Orleans Island; marking the principal harbours, landing places and railway termini.

8. Draw a map of the shores of the Caspian Sea, south of a straight line connecting Baku with Krasnovodsk.

9. Give an account of British Columbia, and point out its advantages to the empire, commercial and strategical.

ANSWERS

Question 1.—The line of Tweed, Teviot and Usk; behind this line, that of the Eden, Irthing and Tyne. The Cheviot Hills would be only a weak line of defence to take up; and the second line I have mentioned would be better than the first, as it has very good lateral communication.

Aldershot, Reading, Didcot Junction, Oxford, Leamington, Rugby, Nottingham, Newark, Doncaster, York, Darlington, Newcastle.

Portsmouth, Winchester, Newbury, Didcot, and so on.

Salisbury, Andover, Swindon, Cheltenham, Worcester, Birmingham, Stafford, Crewe, Preston, Lancaster, Carlisle.

As transports cannot rely on the fleet for protection, the shorter the sea-route the better. Therefore the troops from the south of Ireland, say Cork, would move up by the South-Eastern Railway to Dublin, thence by Drogheda, Dundalk, Donaghadee; from here the sea-crossing to Port Patrick, in Wigtown, is only 22 miles. From Port Patrick by rail, through Dumfries, to Carlisle.

Question 2.—Marseilles to Philippeville, 400 miles. For distances by sea, calculate as follows :—

12 knots an hour—2,000 miles a week.

18 knots an hour—3,000 miles a week.

So that, for the voyage from Marseilles to Philippeville, it will be safe to say two days.

Malta to Hammamet railway terminus, 180 miles; Cartagena to Oran, 100 miles. The railway from Oran, along the eastern frontier of Morocco, ends at Colomb Bechar.

By the railway which runs from Djibou Rezg, near Figig, on the Morocco frontier, up to Perregaux junction, east of Oran; then by Orleansville.

Algiers and Constantine.

Question 3.—(a) From Calcutta by the Madras cable, to Georgetown, in Penang; thence to Singapore; from here to Bali Strait, east of Java, where two cables go to Australia: one landing at Port Darwin and the other at Broome.

(b) To New Zealand; overland wire from Port Darwin to Adelaide, thence to Sydney; cable from Sydney, and there are two cables from Sydney to Nelson in New Zealand.

(c) To send a cable from Calcutta to Canada there is more than one way: by Karachi and the Persian Gulf cable; by Bombay, Aden, Red Sea, Mediterranean; or, by Singapore (as above), Hong Kong, Manilla, and then use the U.S. cable to America.

(d) To connect any of the places mentioned with Malta, the best way is by the Bombay, Aden, Red Sea cable; and

(e) With South Africa; by Bombay, Aden, Zanzibar cable. There is a direct cable between Labuan and Singapore.

Question 4.—Magdeburg, Berlin, Frankfurt, Posen. Thorn, Warsaw, Minsk, Smolensk, Moscow, Pensa, Samara, Orenburg, Tashkent, Samarkand, Bokhara, Merv.

The shortest route is Warsaw, Beriditchef, Ekaterinoslav, Rostov, Petrovsk, Derbend, Baku, Krasnovodsk, Merv, Tchardjui, and by steamer to Khwaja Saleh.

Augsburg, Linz, Vienna, Buda-Pesth, crosses Danube at Neusatz, crosses Save at Semlin, Belgrade, Sofia, Adrianople, Constantinople, across Bosphorus by floating bridge, Scutari, Eski Shehir, Afium Kara Hissar, Eregli, Adana, Ras-el-Ain, Mosul, Baghdad, Basra.

Question 5.—The British East Africa Protectorate extends about 400 miles along the coast from Wanga, or Limba, at the mouth of the Lemba River, to Gobwin, at the mouth of the Juba, and inland to the borders of Uganda. It is divided into the following districts: Coast Province; capital Mombasa. Ukamba; capital Nairobi, Tanaland and Witu; capital Lamu. Jubaland; capital Kismayu. Kenya; capital Fort Hall, Naivasha; and Kisumu. The ports are Mombasa, Lamu, Vanga and Kismayu. The military forces are the 3rd Battalion of the K. A. Rifles, about 1,100 strong. A railway, 584 miles long, runs from Mombasa to Port Florence on Lake Victoria Nyanza. Area, 190,000 square miles; population, 2,000,000. (Read pp. 89, 100.)

Question 6.—See my remarks at the beginning of the answers to Test Paper VIII. Also the answer to Question 4, Test Paper III.

Switzerland is protected against any invasion from the east by the line of the Rhine and the Rhætian Alps, over which the only crossings, Stelvio, Futschöl, Fermont, and Siloretta Passes are difficult and impracticable. On the south, the St. Gothard, Simplon, and St. Bernard are steep on the south slope, and therefore could be easily defended against any attack from that direction, considering that Switzerland holds them. And the Rhine protects Switzerland on the north.

The river Aar, with its branch, the Saane, forms a line of defence from the eastern end of the Lake of Geneva, right up to where it joins the Rhine opposite Waldshut. And this line is greatly strengthened in front by the lakes of Neuchatel and Bienne, and the Jura Mountains which stretch from the west of the Lake of Geneva up to Basel. (Read pp. 141, 142.)

Question 7.—May be copied from any good map of East Canada. The St. Croix River forms the boundary between New Brunswick and the State of Maine; and the Isle of Orleans is just before one gets to Quebec, in the St. Lawrence.

The principal harbours are: St. Andrews, St. George, St. John, Moncton, Sackville, Windsor, Digby (all on the Bay of Fundy); Yarmouth, Shelbourne, Halifax, Guysboro, Picton, Shediac, Chatham, Shippegan, Bathurst, Dalhousie, Rimouski and Montmagri. These are nearly all termini of main railway lines or branch lines.

Question 8.—This can be copied out of any good atlas.

Question 9.—British Columbia extends from the United States boundary to 60° N., and is bounded on the east by Athabasca and the province of Alberta. Its area is nearly 400,000 square miles, and its population about 300,000. It is rich in minerals and coal. There is a growing industry in tinned-fish and timber. The capital is Victoria, on Vancouver Island. Vancouver City is the terminus of the Canadian Pacific Railway.

Colonel Murray (*Imperial Outposts*) says:—

“Vancouver Town is the western terminus of the most important strategical railway of the empire. What the Suez Canal does for British interests in the East the Canadian Pacific Railway does in the West. As the canal links the Mediterranean Sea with the Indian Ocean, so does the railway through Canada join the Atlantic to the Pacific, only much more securely, since the junction is exclusively British. . . . By this route the English mails will reach Shanghai in 27 days, as against 32 days by the London-Brindisi-Suez route. And Yokohama is now only 22 days distant from London.” When the Grand Trunk Pacific Railway, from Quebec to Prince Rupert, is finished, Yokohama, being then 420 miles nearer to the terminus, can be reached in 20 days. This terminus, Prince Rupert, is 500 miles north of Vancouver.

X

1. A great naval battle is fought in the North Atlantic Ocean. Vessels of the British fleet have to put in for repairs, supplies, etc., into the best harbours on the west of the British Islands. Into what harbours would they go? If the whole fleet wished to go into one harbour, where would they put in? What is the nearest military station to each harbour?

2. What are the principal railway centres in Switzerland? And how are they most directly connected with the principal centres and ports of Germany, France and Italy?

3. Point out the defects of the land-frontier of Italy, from a strategic point of view. And what constitutes the strategical importance of St. Maurice (Switzerland)?

4. Give an account of the roads which connect Teheran with the different parts of Persia, and with the Russian, Turkish and Afghan frontiers. And give the position of Astara, Kasbin, Kermanshah, Nushapur and Ashourada.

5. What are the principal places passed through in the most direct railway route between :—

- (a) Paris and Moscow,
- (b) Paris and Constantinople,
- (c) Vienna and Petrograd?

6. Describe, with sketch, the course of the Rhine, from the place it leaves Boden See until it enters Holland. Show its tributaries, including the Neckar, Lahn, Ruhr, Lippe and Kinzig.

7. Draw a sketch-map of both sides of the English Channel, marking all the important ports, and giving the distances between them along their own coasts, and across the Channel.

8. What are the principal mountain ranges of the Iberian Peninsula, and the passes across them? What are the principal rivers and the principal towns on them? Point out how an army advancing from west to east in the Peninsula has a great strategic advantage over one moving from north to south.

9. Draw a map of the Bavarian Palatinate; and show the strategic importance of its position in case of a French invasion of South Germany, based on Switzerland.

ANSWERS

Question 1.—The dockyards in Great Britain are: Portsmouth, with six large docks, three large basins, and ten small docks; Devonport, one dock for large battleships, five smaller docks, and two large slips; Keyham, three large docks and three small ones; Chatham, one very large dock and four small ones; Sheerness, five small docks; Pembroke, one dock for smaller battleships; Haulbowline (Cork Harbour), two docks which can take any ship.

We may take it that the battle has been fought by what is now

called the Atlantic fleet, that force which was formerly known by the name of the Channel fleet. If the disabled vessels had to put in for supplies only, they might go into Blacksod Bay, Berehaven, or Moville in Lough Foyle. These would be the nearest places of refuge. But neither of these places has any land defences, and the vessels getting supplies would be running a great risk if they were dealing with an energetic and victorious enemy. It would be better for them to put in the most disabled at Haulbowline, the others at Devonport and Portsmouth. If the whole fleet wished to go into one harbour, the best place they could go to would certainly be Milford Haven. Each of the dockyards above mentioned is defended by a strong military force.

Question 2.—The principal railway centres on the Swiss frontier are Geneva and Basel ; in the interior Zurich and Lucerne.

A railway runs from Geneva through Lausanne and Martigny to Brieg (128 miles long) ; then through the Simplon Tunnel, 12 miles long, coming out to Domo d'Ossola, near Lake Maggiore, a saving of 125 miles on the former route from Paris to Milan.

From Basel to Paris the main line runs through Belfort ; and the Swiss line from Basel connects through Neuchatel with the Geneva-Brieg line at Lausanne. A line also runs from Basel, through Strasbourg to Frankfort, the great German railway centre ; and another to Constance (91 miles), and through the Arlberg Tunnel into Austria. From Zurich to Munich, the capital and railway centre of Bavaria, the line goes first to Romanshorn, crosses the lake by ferry to the terminus of Friedrichshafen. A line goes south from Zurich, through Altdorf ; enters the St. Gothard Tunnel at Goshenen, comes out at Ariolo (9 $\frac{1}{4}$ miles), runs down the Valley of the Ticino to Milan.

Question 3.—Beginning on the east, where the frontier runs north from the Adriatic, for the first 70 miles there is nothing that could, by any means, be termed an obstacle ; as the small streams of the Ausso and Judrio form no line of defence. The position of Udine is of no strength, and could easily be turned on either flank. From Pontafel, just over the Austrian frontier, where the Carnic Alps begin, to the Puster Thal, the mountains form a defence. From here to Primalono, in the defile of the river Brenta, the frontier is partly protected by the Venetian Alps. Between this and the little railway station of Peri, where the Adige (or Etsch) enters Italy, there are no roads nor passes. Moving up the Valley of the Oglio we come to the Stelvio Pass, 9,000 feet, just on the borders of the Tyrol and Switzerland, by which an Austrian or Swiss force could move into the Valley of the Adda ; and, more to the west of this, the Passes of St. Gothard and St. Bernard, over which Moncey and Bonaparte led armies in the campaign of 1800.

Nearly all the roads which lead from Italy into Switzerland are barred by strong positions at important points. Thus, the way in through the west of the canton of Valais is stopped at the defile of St. Maurice, which commands any advance into Switzerland on the south of Lake Geneva ; the way by the Rhine Valley is closed

by the defile of Sargans, and that by the Reuss is barred by the defensive works of St. Gothard.

Question 4.—(a) From Teheran to the Caucasian frontier ; through Kasvin (branch to Resht and Enzeli), Akhand, Tabriz, to Urdabad and Julfa.

(b) To Baghdad, through Hamadan, Kermanshah and Khamkin.

(c) To Mohammerah, either by :—

(1) Kum, Burujird, Kuramabad, Dizful, Shuster, Ahwaz ; or by

(2) Kum, Kasban, Ispahan, Ardal, Ahwaz.

(d) To Bushire, by Kum, Kasban, Ispahan and Shiraz.

(e) To Bunder Abbas : by Kum, Kasban, Ispahan, Yezd, Kerman and Dashtab.

From Kerman a road goes to Nasirabad, on the Seistan frontier.

In addition to the above three are the caravan routes, from Teheran through Meshed to Herat ; from Teheran by Amol and Barfrush to Asterabad ; from Yezd by Kerman, to Kelat ; and from Ispahan to Baghdad.

Astara is on the south-western shores of the Caspian Sea, just on the Persian side of the Russo-Persian frontier.

On the direct road between Teheran and Ispahan, just about half-way between these two places.

In the west, on the road from Hamadan to Baghdad.

Almost direct west of Meshed.

The Russian naval station in the Bay of Asterabad.

The projected Russian railways through Persia are on the following routes :—

From Julfa, by Tabriz, Teheran, Kum, Yezd, Kerman, Bunder Abbas. Branch from Teheran, by Shahrud to Meshed. Branch from Kerman by Birjand to Meshed. Branch from Birjand to the south, skirting Seistan, and terminating at the port of Chahbar.

Question 5.—(a) Namur, Liege, Cologne, Hanover, Berlin, Thorn, Warsaw, Smolensk, Moscow. The shortest way from Paris to Odessa takes off from this line at Berlin, and goes through Breslau, Cracow and Lemberg. From Moscow the traveller can go by Samara and Orenburg to Tashkent and Samarkand.

(b) Strasburg (312 miles), Carlsruhe, Stuttgart, Munich (570 miles from Paris by this route), Vienna (840 miles), Buda-Pesth (1,000 miles), Belgrade (1,218 miles), Sophia, Philippopolis ; and Constantinople, 1,857 miles from Paris.

(c) Oderberg, Cracow, Warsaw, Byalystock, Vilna, Dünaburg, Petrograd. From Vienna to Cracow is the same distance as from Vienna to Prague, 260 miles. From Petrograd to Warsaw is 550 miles ; and Warsaw is 250 miles nearer to Berlin than it is to Petrograd.

Question 6.—The sketch can be easily copied from any good map ; but as the student may not know how to set about describing its course, the following may serve for a model :—

After leaving Boden See the Rhine runs generally west to Basel ;

dashing over 70 feet of rugged rock at Schaffhausen, and receiving its most important tributary in this part of its course, the Aar, opposite Waldshut. There are two small tributaries on the right bank, the Wutach and the Alle. What is called the Upper Rhine ends at Basel.

The Middle Rhine flows northward from Basel to Mannheim, through the valley formed by the Black Forest on the east and the Vosges on the west. The important towns on it are Brisach, on both banks; Strasburg and Kehl; and Spires. The Rhine-Rhone Canal joins it near Strasburg, and goes to the south-west by Mulhausen. The Ludwig's Canal connecting it with the Danube, joins it at Mannheim. The principal tributaries are Kinzig and Neckar on the right, and the Ill on the left. Opposite Mannheim is Ludwigshafen, a great commercial centre. The Rhine then flows past Worms, Mainz, Bingen and Coblenz. At Mainz, a very strong fortress, it is joined by the Main, from the east. At Bingen its course is somewhat impeded and narrowed by the approach of the Taunus Mountains on the east and the outlying spurs of the Vosges (called the Hardt) on the west. At Coblenz it receives the Moselle from the south-west and the Lahn from the east, passing below the strong natural fortress of Ehrenbreitstein. It then passes by Bonn, where it receives the little river Sieg from the east, and then reaches Cologne, a well-fortified city and important railway junction, 360 miles from Berlin, and 175 miles from Rotterdam. It then passes by the rich mining centres of Dusseldorf and Crefeld, receiving the Ruhr and Lippe on its right bank; and passes into Holland close to the small Dutch station of Zevenaar. In the lower part of its course canals connect it with the Meuse, Marne and Scheldt. (Read pp. 117-120.)

Question 7.—On the French side, in the following order:—

Dunkirk, Calais, Boulogne, Dieppe, Havre, Cherbourg, St. Malo, Brest.

On the English side: Dover, Folkestone, Newhaven, Portsmouth, Southampton, Weymouth, Plymouth, Devonport, Falmouth.

Distances in English miles: Dover to Calais, 22; Folkestone to Boulogne, 30; Newhaven to Dieppe, 66; Southampton to Havre, 106; Plymouth to Cherbourg, 115.

Question 8.—Pyrenees; Col de la Perche, east, and Roncevalles, west. Sierra de Guadarrama; Somo Sierra and Escorial. Sierra de Gaeta; Banos and Perales. Sierra Toledo, Sierra Morena and Sierra Nevada.

The course of these rivers and of the mountain ranges, generally from east to west, had a very considerable influence on Wellington's strategical movements and plans of campaign in the years 1810-13.

Question 9.—As may be seen from any map of South-Western Germany, the Palatinate stretches from Kreuznach, south-west to Saarbruck, and south-east through Worms to Mannheim: being bounded on the east by the Rhine to its junction with the Lauter, and on the south by Alsace.

In the plan of campaign against France, drawn up by the Prussian

Chief Staff in the winter of 1868-69, it was settled that in case France made a dash across the Rhine to separate the Southern German States from Prussia, a Prussian army of 240,000 men should at once occupy the Palatinate, so as to be able to strike at the flank or the lines of communication of the invading French army. And when the war broke out in July 1870, the Third German army, under the command of Crown Prince Frederic, concentrated in the Palatinate, making it, and the Rhine from Mainz to Mannheim, their base of operations. Against such an army, so placed, a French army moving from Metz as a base, against Prussia, was left only the choice between a direct frontal attack and a flank march on a narrow strategic front, between Sieck and Saarbruck. (For the Military Geography of this part of Europe, read pp. 121-126.)

TWENTY TEST PAPERS ON IMPERIAL MILITARY GEOGRAPHY

SELECTED FROM THE MOST RECENT EXAMINATIONS IN THIS SUBJECT

(The following questions have been recently set in the Army Entrance Examinations, Special Examination in Geography for the B.A. Degree, and Geographical Tripos Examination, Cambridge University. The Answers to most of them will be found in the previous pages.)

I

1. Draw a sketch-map of India; mark and name the rivers Indus and Ganges; and the towns Bombay, Madras, Karachi and Cawnpore. (pp. 40, 41.)

2. Select *three* of the following towns: Winnipeg, Cape Town, Delhi, Rangoon, Sydney. Describe carefully the geographical position of each of those you select, and state the reasons for its importance.

3. Give the chief physical regions of Australia, and briefly describe the characteristic features of each region. Illustrate by a sketch-map. (pp. 58-63.)

4. On the map of Africa name the Abyssinian Plateau, the Zambesi, Victoria Nyanza, and the Kalahari Desert. Insert any two important railway lines running from the east coast of Africa into the interior, and name the points from which they start. (pp. 170-174.)

5. Point out the importance of the geographical position of Sierra Leone. (p. 87.)

II

1. Mention the chief areas from which Great Britain draws her wheat supply, and indicate in each case the routes and means by which it reaches Great Britain. (p. 35.)

2. What are the chief sheep-producing areas of the southern hemisphere? How far is it climate that determines them? Are their exports identical? (pp. 63 and 66.)

3. What great terminal ports of the ocean highways lie outside the British Empire? Which of the great junctions on the ocean highways are within the British Empire, and how are they situated?

4. Make a table to show which parts of the world supply Great Britain with raw material and foodstuffs, distinguishing between those within and those without the empire. (pp. 35 *et seq.*)

5. Give the reason for the low salinity of the Baltic, and the Atlantic near Newfoundland.

(The small quantity of salt, or "low salinity," of the Baltic, is due to the great amount of fresh water flowing into it from the various rivers. The Neva conveys a greater quantity of fresh water to the sea than any other European river. And the evaporation from the Baltic is less than that from any other inland sea in Europe. The melting of the icebergs brought down by the Arctic current to the shores of Newfoundland lessens the salinity of the Atlantic in these regions. Frozen sea water contains but very little salt.)

III

1. Account for the rise and fall in importance of Bristol, Calicut, Cape Town, Malacca and Venice.

(The natural advantages of Liverpool and Glasgow, owing to their geographical position. Goa is a far better and more convenient harbour. The Suez Canal. Singapore. The discovery of the Cape route to India, by Vasco da Gama, 1497.)

2. Describe briefly the position of the Azores, Cape Verde Isles, Madeiras and Philippines. To what countries do they belong?

(Portugal; Portugal; Portugal; United States.)

3. Give some account of the partition of the East Coast of Africa among European powers. (pp. 172 *et seq.*)

4. To what extent have natural features been utilised for political boundaries in North America? (pp. 67-69.)

5. Which are the principal ports of Australia? To what extent are they connected by railways? (pp. 62 *et seq.*)

IV

1. Give a list of the countries which form the British Empire, and their populations. (pp. 39 *et seq.*)

2. Mention the main ocean trade routes between Australia and Europe, and compare their respective advantages.

3. Name the chief dependencies of the British Empire; give their situation and the capital of each. (pp. 39 *et seq.*)

4. What parts of Asia are desert? What are the causes of this? Are any parts of the desert area cultivated? What is necessary for this cultivation and how is it obtained?

5. Give an account of a voyage by sea from London to Hong Kong when the vessel touches at every British port on the way.

V

1. Give an account of the influences of wind, ice and ocean currents on the trade-routes in the North Atlantic.

2. Draw an outline-map of West Australia, and on it name and mark the positions of four towns, three rivers, three harbours and three mountain ranges. (pp. 58 *et seq.*)

3. Draw an outline-map of Africa, marking the courses of the principal rivers, the location of the chief lakes, and the islands near the coast. (pp. 172-174.)

4. Where are the following products found in South Africa : sheep, copper, diamonds, tobacco, wheat ? (pp. 77 *et seq.*)

5. Describe the basin of the St. Lawrence and the Great Lakes, indicating the extent to which it gives access to the interior of North America. (p. 242.)

VI

1. "Austria is not a State, but a Government." How far was this statement, made concerning Austria-Hungary before the war, justified by geographical conditions ? (pp. 127 *et seq.*)

2. Draw a sketch-map of the Alps, indicating the railway routes by which they are crossed. What industrial and commercial regions are served by each railway ? (p. 142.)

3. Draw a map of Queensland, marking on it : Great Barrier Reef, Moreton Bay, Thursday Island, Brisbane River, Fitzroy River, Flinders River, Mackay, Rockhampton, Charters Towers and Townsville. (pp. 58 *et seq.*)

4. Describe the course of the river Nile, and explain its importance to Egypt. What is the cause of the annual rise of the Nile ? Why is Egypt almost a rainless country ? (pp. 91 *et seq.*)

5. Give an account of the railways in South Africa. (pp. 79 *et seq.*)

VII

1. Write a short geographical account of Mesopotamia or British East Africa, with special reference to the possibilities of economic development. (pp. 185, 84, 85 *et seq.*)

2. Give an account of the principal coalfields at present worked in South Africa ; the principal markets for the coal produced, and the means of transport to these markets. (pp. 77 *et seq.*)

3. What is meant by "inland drainage" ? Locate two areas of inland drainage in Asia, and describe one of them in detail. Illustrate your answer by a sketch-map.

4. Record the distances, in geographical miles, between Colombo

and the following four places : Aden, Bombay, Durban and Singapore.

(A *geographical*, or *nautical*, mile is 6,080 feet. The *English statute mile* is 5,280 feet. Therefore the ratio of the former to the latter is 608 to 528, which, for general purposes of calculation, may be taken as 13 to 11. Therefore, to bring geographical miles to statute miles, multiply the former by 13, and divide the product by 11 ; and *sm.* to *gm.*, multiply by 11 and divide by 13. Sea distances are always given in geographical miles ; land distances in statute miles.)

5. Describe and account for the climate of India. (pp. 46 *et seq.*)

VIII

1. Discuss the political and economic problems involved in the settlement of the Northern Territory of Australia. (pp. 58 *et seq.*)

2. Contrast Canada and New Zealand as outlets for the British emigrant, under the following heads : scope, climate, resources. (pp. 65 *et seq.*)

3. What are the chief imports of India ? From what countries are they brought, and at what ports are they landed ?

4. Discuss the influence of the Rhone Valley on the political development of France.

5. The railways of the Punjab follow more or less closely the courses of the Indus and its tributaries. Explain this fact, and say to what causes railway expansion is chiefly due. (pp. 48-49.)

IX

1. Describe a coasting voyage from Bombay to Zanzibar, mentioning the river mouths and ports passed on the way.

2. Give an account of the Russian railways whose termini are near the frontiers of Afghanistan. (pp. 195, 226, 227.)

3. Give an account of the summer and winter monsoons in India, and show that in each case their scientific cause accounts for their regularity. (pp. 46 *et seq.*)

4. Describe the route of the Trans-Siberian Railway, and point out its political and economical advantages. (pp. 162, 163, 244.)

5. Draw a sketch-map of South Central Europe, between a line drawn from Frankfort to Cracow and one from Trieste to Temesvar. (p. 126.)

X

1. Compare the influence of the St. Lawrence and the Great Lakes upon French settlement in Canada with the influence of the Appalachians upon British settlement on the Atlantic coastal plain.

2. Trace the route of quickest transit (a) from Lahore to Madras, (b) from Calcutta to Bombay, and (c) from Bombay to London. What alternative routes exist between these cities ?

(a) Lahore, Amballa, Delhi, Muttra, Jhansi, Bina, Bhopal, Itsarsi, Manmad, Dhond, Hogti, Wadi, Guntakal, Arkonam, Madras.

(b) Calcutta, Asansol, Moghal Sarai, Manipur, Katni, Jubulpore, Itsarsi, Bhusaval, Manmad, Kalyan, Bombay.

(c) Already given in this Geography, pp. 48, 49.

3. Describe the chief topographical features of North America between New York and San Francisco.

4. What were the indirect effects of the war on the economic relations between New Zealand and the United States ? (p. 66.)

5. What are the greatest sugar-producing districts in the world ? How are they situated, and to whom do they belong ? (pp. 35, 108.)

XI

1. Describe three available routes from London to Peking, and discuss their relative advantages.

2. Mention the five best harbours in the West Indies, giving their situation and advantages to the countries to which they belong. (pp. 98 *et seq.*)

3. Where are the chief coalfields of Europe ? Name the principal towns which have grown up on them.

4. During the war, British troops were sent from (a) Peshawar, (b) Meerut, (c) Bareilly, (d) Quetta, and (e) Ahmedabad, to Basra, *via* Karachi ; give in their order the military stations and important places they passed through before embarkation.

(a) Rawal Pindi, Lahore, Multan.

(b) Delhi, Bhatinda, Samasata, Sukkur.

(c) Saharanpur, Umballa, Lahore, Multan.

(d) Bolan Pass, Sibi, Ruk Junction.

(e) Marwar Junction, Luni, Hyderabad. (pp. 48, 49.)

5. What are the (a) existing and (b) possible sources of iron ore for the use of British manufactures ? (pp. 37, 74.)

XII

1. Give an account of the physical features of Scotland, its chief cities and industries. (pp. 27 *et seq.*)

2. Give a geographical account of an overland journey from Antwerp to Calcutta. Describe briefly the main surface features, and the industries obtaining in the areas traversed.

3. What kind of goods do we import from Canada, China, India and Australia respectively ? What class of commodities do we send them in return ? (pp. 58 *et seq.*)

4. Account for the commercial importance of Switzerland, Belgium, Denmark and Czecho-Slovakia. (pp. 140, 169, 18, 107 *et seq.*)

5. Point out how the climates of Newfoundland and Northern France differ so, seeing that these countries are in the same latitude. Explain the reason of this, and show how this difference of climate causes the vegetable productions and the occupations of the people in the two countries to be of so diverse a character.

XIII

1. The centre of Australia, Tibet, the Sahara and the plateau of the Western United States, have very little rainfall. What are the general principles by which this can be accounted for?

2. Show by a rough sketch the trade-route by which goods are usually sent from New York to Melbourne. Mark the chief ports along the route.

3. Name the most important British possessions in the West Indies, and show wherein their importance lies. (pp. 98 *et seq.*)

4. Two men, A and B, travel from Glasgow, for Yokohama, in the month of June. A goes *via* New York and San Francisco; B *via* Fort Churchill and Vancouver. Which of them gets first to Yokohama, and what is the difference between the times taken on the journey? (p. 73.)

5. Compare the east and west coasts of Australia in respect to population and products, and give an explanation of the differences observed. (pp. 59 *et seq.*)

XIV

1. What are the colonies which compose what is called British South Africa? What is the chief town in each, and what are their resources? (pp. 75 *et seq.*)

2. What are the wettest and the driest parts of India? Account for the excessive rainfall or drought in each case. (p. 46.)

3. Point out the importance of the geographical position of Singapore. What distance is it from Calcutta, Colombo, Manilla and Hong Kong? (p. 96.)

4. Describe the chief products of the Straits Settlements and the Federated Malay States, their chief ports, and the trade-routes from them to Australia, Canada and England. (p. 248.)

5. Discuss the value of the Canadian Pacific Railway as a link between different parts of the British Empire. (p. 72.)

XV

1. Give an account of the Baghdad Railway, and discuss its economic and political importance. (pp. 196 *et seq.*)

2. Describe the principal products of Canada, and the trade-routes from Canada to Glasgow, Cape Town and Melbourne respectively. (pp. 70 *et seq.*)

3. Draw a sketch-map of the pre-war German Empire, and mark off, by shading, the districts which Germany lost by the Treaty of Versailles. (p. 130.)

4. Explain why the delta of the Rhine is so much better for commercial purposes than that of the Rhone, the Nile, or the Po.

5. Describe briefly the main characteristics of the railway system of Australia. (pp. 61-63.)

XVI

1. Describe the course of the "All-Red" submarine Cable Line. (pp. 64, 96.)

2. What are the chief markets for Australian flour, gold, hides, horses and wool? (p. 63.)

3. Name and give the position of the European possessions in the East Indies.

4. Point out the importance of the geographical position of Morocco, and its importance in recent European history. (pp. 177-179.)

5. Where are the following races of men to be found, and to which of the classes of mankind do they belong: Kalmucks, Magyars, Mincopies, Ostiaks, Czechs, Maoris, Pathans, Bashkirs, Basutos, Samoyeds, Ainos, Bhils and Houssas.

(S.W. Siberia; Hungary; Andaman Islands; N.W. Siberia; Bohemia; New Zealand; N.W. India; Caspian regions; S. Africa; Siberia; N. Japan; Rajputana; Nigeria.)

XVII

(The answers to this and the following Test Papers may be found in the text of this book. Military Students are advised to read through it carefully before attempting to answer these papers.)

1. A Senior N.C.O. asks you to explain to the men how they, as individual citizens in Great Britain, benefit from the maintenance of the empire. He says that the men realise what the Dominions and Colonies did in the war, but they ask how does the Mother Country benefit in peace time?

Write down shortly the points you would make to the men in order to put before them a correct view of the position.

2. Your C.O. sends for you and says: "We have this large draft going out to India, and no doubt they will find themselves pretty soon upon the frontier. I want you to give them a short lecture on the frontier. You should only touch on the broad outlines, but tell them of the people, the climate, the country and how each may affect fighting on the frontier."

Write out short notes for your lecture, attending to the points you wish to bring out in accordance with the instructions of your C.O.

3. In the empire the Commonest frontier is the Sea. What are the advantages and disadvantages of the sea frontier from the point of view of attack and defence?

4. Between the end of the Napoleonic wars and the beginning of

the late war (1914-18) the empire increased in size enormously. Was this growth due to a settled policy of the Central Government in England? If not, how do you account for it?

5. Sir Charles Lucas, in his book *The British Empire*, says, as a general statement:

“In the temperate zones are the lands which the English, with or without other European races, have peopled, while the lands where the English do not settle so much as trade and rule, are the tropical regions.”

Discuss this.

6. During the eighteenth century large naval and military forces were constantly employed in the West Indies. Now only a small force is maintained in this portion of the empire. Account for this, and state if this situation is likely to continue.

7. What were the advantages and disadvantages of the geographical position of the island of Great Britain in the late war (1914-18)?

8. One of the Chief Lines of Communication of British trade runs through the Mediterranean. Describe our present position as regards the defence of that route.

9. Mark on attached sketch (not issued with this book) of North America the frontier between Canada and United States. Account for its shape historically, and discuss the line from its military aspect. (The Alaskan frontier will not be considered.)

10. Select a British Campaign in any theatre of war out of Europe either prior to or during the late war, and show how the climate has affected military operations.

11. In time of peace only certain parts of the empire are garrisoned by British troops. How do you account for the general distribution of our oversea garrisons?

12. Explain in outline the constitution of any one of the self-governing dominions which you may select.

13. Take as an example any Crown Colony, and describe how it is governed.

Note.—

Questions 1 and 2, only one to be answered.

Questions 3 to 13, only three questions to be answered.

(Military Education Department.)

XVIII

1. The G.O.C. has formed a class of N.C.O.'s and men of various units studying for the 1st Class Certificate of Education. He has selected you to give a lecture on the Military Geography of:

(a) Mesopotamia

or (b) The Union of South Africa.

Write out short notes for either lecture dealing with the military importance of climate, natural resources, physical features, communications and frontiers.

2. The armies of the allies after the Armistice advanced to and held the Rhine.

Putting on one side ethnographical questions, discuss whether such a river as the Rhine would make a good permanent frontier against Germany.

3. One of your men, a reliable soldier of good physique, having a 3rd Class Certificate of Education, but no trade, is about to be transferred to the Reserve.

He is 25 years old, unmarried, and with £30 of savings. He asks your advice as to emigration within the empire.

Where would you advise him to settle? Give your reasons.

4. Gibraltar has held a prominent military position in the empire for more than 200 years. In your opinion, what is its value to the empire at the present day?

5. Captain Mahan, the naval historian, wrote, more than 30 years ago, on the question of commerce-destroying at sea:

"The harassment and distress caused to a country by a serious interference with its commerce will be conceded by all. It is doubtless a most important secondary operation of naval war, and is not likely to be abandoned till war itself shall cease; but regarded as a primary and fundamental measure, sufficient in itself to crush an enemy, it is probably a delusion, and a most dangerous delusion, when presented in the fascinating garb of cheapness to the representatives of a people. Especially is it misleading when the nation against whom it is to be directed possesses, as Great Britain did, and does, the two requisites of a strong sea-power—widespread healthy commerce and a powerful navy."

Discuss the above with reference to what happened during the late war at sea.

6. H.M.S. *Renown* went to Australia and back *via* the Panama Canal. Omitting the consideration of visiting certain places near the route, how does the length of the voyage to Melbourne compare with that:

- (a) Through the Suez Canal?
- (b) Round the Cape of Good Hope?
- (c) Through the Straits of Magellan?

7. What are the alternative routes by which a telegram can be sent from London to Calcutta? Describe them and show how they differ from those in use seven years ago.

8. During the late war there was a military demand in Great Britain for:

- (i) Timber.
- (ii) Jute.
- (iii) Meat.

Say where in the empire these are severally produced in large quantity, and account for their production.

9. A party of your friends were returning yesterday from Bergen bound for Leith.

You look in the morning paper where you find the Weather Chart.

Estimate what sort of weather they were experiencing before sundown on the assumption that they were half-way across.

Note.—

Questions 1 and 2.

Here there was a choice of one question out of the two.

Questions 3 to 9.

Here there was a choice of three questions to be answered out of six.

(Military Education Department.)

XIX

1. What do you consider constitutes the possible strategic importance of three of the following defended ports :

- (i) Gibraltar.
- (ii) Cape Town.
- (iii) Malta.
- (iv) Bermuda.
- (v) Singapore ?

2. There has been talk in the Press of selling the British West Indian Islands to the United States of America. What would be the strategic advantage and disadvantages of such a proceeding to the empire ?

3. Should there be another war, it would probably be necessary to utilise the whole available man-power of the empire. In the late war the French made much more use of the African troops than we did. In your opinion, would the inhabitants of British possessions in East and West Africa respectively constitute a good source of personnel for fighting purposes in such an event ?

4. One of the most important Air Routes in the empire is obviously that between this country and India : taking 600 miles as the maximum distance between aerodromes, which route do you recommend which will have as few as possible on non-British territory without unduly sacrificing considerations of economy.

5. Your Company Quartermaster-Sergeant comes to you and says, "I see in to-day's orders that they are calling for the names of N.C.O.'s willing to serve with the Nigeria Regiment. Will you tell me where Nigeria is, what the country and climate are like, and what sort of fighting we should get ?"

Write out some notes on this for him.

6. Explain how the geography of East Africa was one of the chief causes of the campaign against Von Letter lasting right through the war.

Were the topographical conditions always in favour of the Germans ?

7. The voyage of the Prince of Wales to New Zealand through the Panama Canal in a big battleship was a reminder of the possibilities of this route.

What do you consider are the advantages to the empire, if any, of this route to Australasia ?

(a) In peace.

(b) In case of war with an European or Asiatic Power.

8. Your unit has just been ordered to Palestine. Your C.O. says to you : " I want you to give your men a lecture on Palestine. Tell them a little about the Jews, Arabs and Turks, and what sort of country it is. Remember, they do not know if it is desert or jungle, or anything about it. We may have some scrapping with raiding Arabs, so tell them the kind of fighting they may be in for."

Write out notes for your lecture.

9. Do you think that the introduction of long-distance wireless telegraphy has lessened the need for " All Red " cable routes within the empire ?

10. Give a few particulars about any three of the following :—

British North Borneo.

Sierra Leone.

Tasmania.

British Somaliland.

British Guiana.

Ceylon.

Newfoundland.

11. What, in your opinion, is the value to the empire of one of the following :—

(a) The Falkland Islands.

(b) Hong Kong.

(c) Cyprus.

12. Do you think that the Prince of Wales's tours in the Dominions serve to increase the general knowledge of Imperial Geography ? Have you learnt anything in this respect ? What other Imperial advantages may be expected to result ?

13. A friend of yours in an infantry battalion in England writes to say that he wants to get away from his regiment for a few years to some country where he may expect more active soldiering, and some big game shooting.

What would you recommend, and why ?

14. What was formerly German South-West Africa is now being administered by the Union Government of South Africa.

What advantages, if any, does the latter thereby gain ?

15. What ports or districts in New Zealand would it be most essential to defend if that Dominion were threatened by an oversea raid on a large scale ?

(Note.—A map of the world is issued with this paper.)

(*Military Education Department.*)

XX

1. Your C.O. sends for you and says: "I want you to give a lecture to the men of your Company on the British Army outside the British Islands. Tell them roughly where the bulk of it is stationed in peace time, and why it is necessary for them to be there. You might divide your subject into 'India,' the 'Middle East' and 'Coaling-Stations.' Do not go into figures or the size of the garrisons and do not be more than 20 minutes."

Write out your notes for the lecture.

2. You are in command of a mixed draft which is about to proceed overseas to various stations in the East.

The troopship is to sail from Southampton and touch at the following ports:—

Gibraltar, Malta, Port Said, Aden, Bombay, Singapore and Hong Kong.

You are ordered to give a short lecture to the draft on the route the ship will follow and the places it will pass and stop at.

You should bring out points which will be of interest to them as soldiers and as citizens of the empire.

Write out notes for your lecture.

3. It has been said that in operations in Eastern theatres of war the characteristics of the enemy, the nature of the country and the climate, are more serious opponents than the weapons of the enemy.

Discuss this statement with reference to operations in Mesopotamia against the inhabitants of that country.

4. There are five main lines by which forces can operate from India against Afghanistan; write a brief description of any one of them, stating to what area of Afghanistan it gives access, what means of transport would be used on it, and any special characteristics about it you consider of military importance.

5. The armies of the allies after the Armistice advanced to and held the Rhine.

Putting on one side ethnographical questions, discuss whether such a river as the Rhine would make a good permanent frontier against Germany.

6. Gibraltar has held a prominent military position in the empire for more than 200 years. In your opinion, what is its value to the empire at the present day?

7. On what countries within the empire do the British Islands chiefly depend for their supply of the following foodstuffs at the present time (1921):

(a) Wheat and flour.

(b) Beef and mutton, and

(c) Butter and cheese.

Account for the supply of these articles from the countries concerned.

8. Discuss briefly the advantages and disadvantages of the "Channel Tunnel."

9. Discuss the strategic importance of any three of the following :—

Hong Kong.

Berehaven.

Marshal Islands.

Bermuda.

Cyprus.

Dover.

Rosyth.

(Military Education Department.)



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